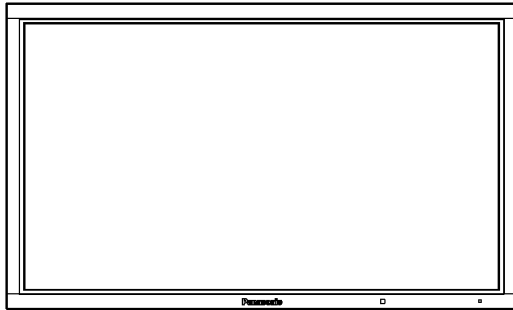


Service Manual

High Definition Plasma Display

Model No. **TH-85PF12U**

GPF12D Chassis



WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE


There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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1 Safety Precautions

1.1. General Guidelines

1. When conducting repairs and servicing, do not attempt to modify the equipment, its parts or its materials.
2. When wiring units (with cables, flexible cables or lead wires) are supplied as repair parts and only one wire or some of the wires have been broken or disconnected, do not attempt to repair or re-wire the units. Replace the entire wiring unit instead.
3. When conducting repairs and servicing, do not twist the Faston connectors but plug them straight in or unplug them straight out.
4. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
5. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
6. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1Mohm and 5.2Mohm.

When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

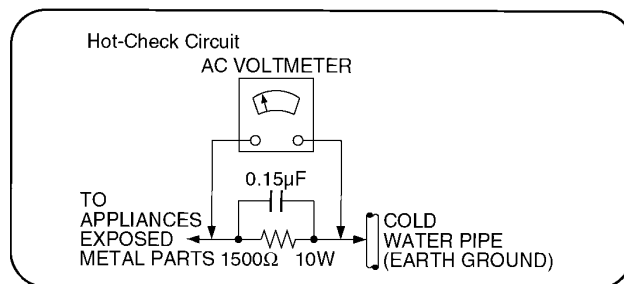


Figure 1

1.1.2. Leakage Current Hot Check (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kohm, 10 watts resistor, in parallel with a 0.15µF capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise ham less motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

2.2. About lead free solder (PbF)

Note: Lead is listed as (Pb) in the periodic table of elements.

In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.

The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).

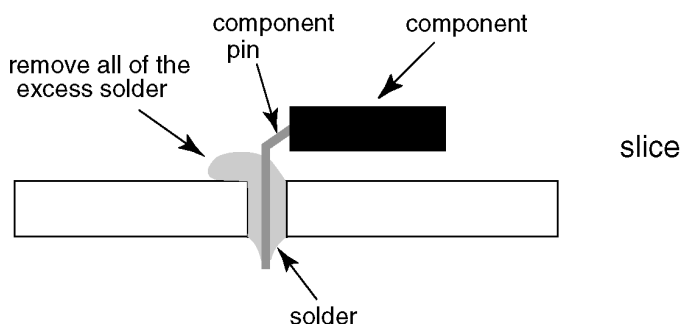
That is Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

PCBs manufactured using lead free solder will have the PbF within a leaf Symbol **PbF** stamped on the back of PCB.

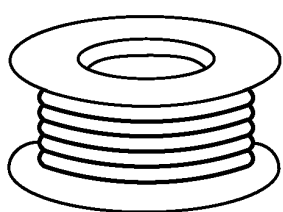
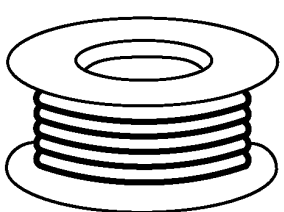
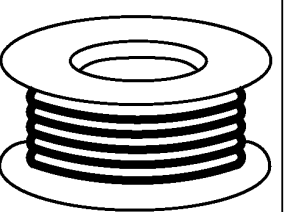
Caution

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30~40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).
If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.
- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



Suggested Pb free solder

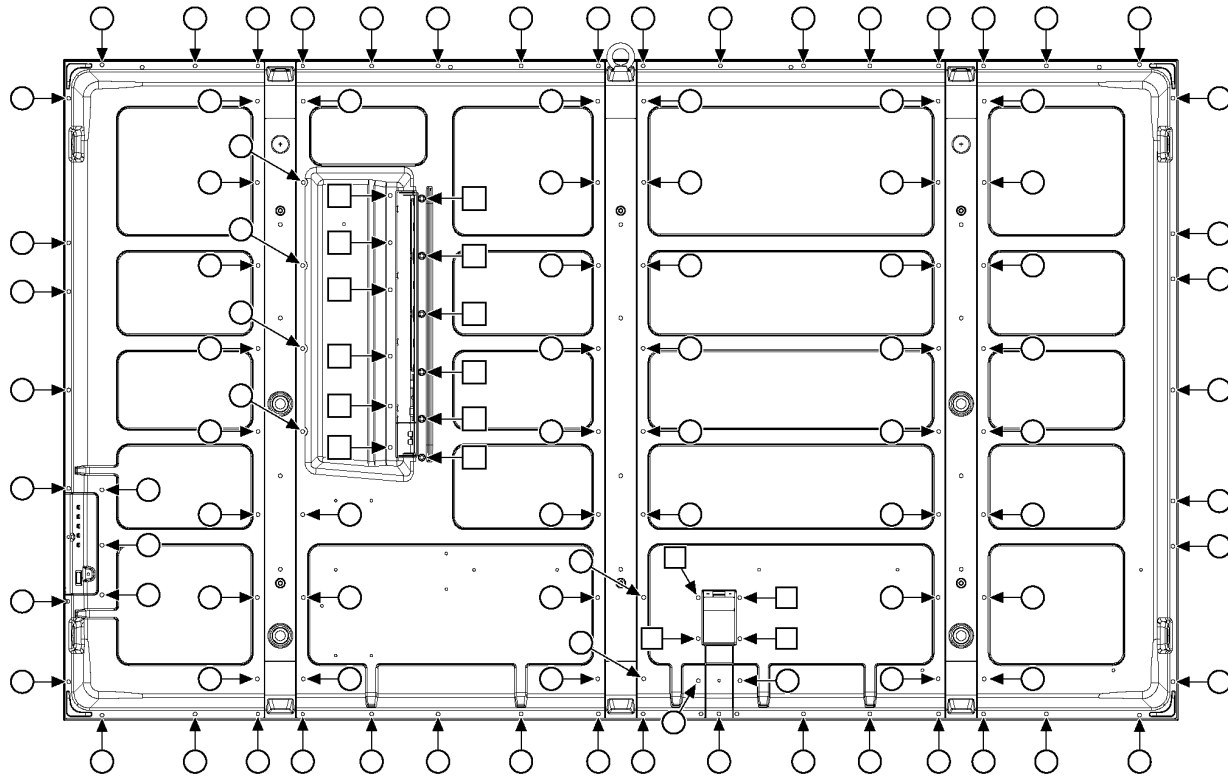
There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

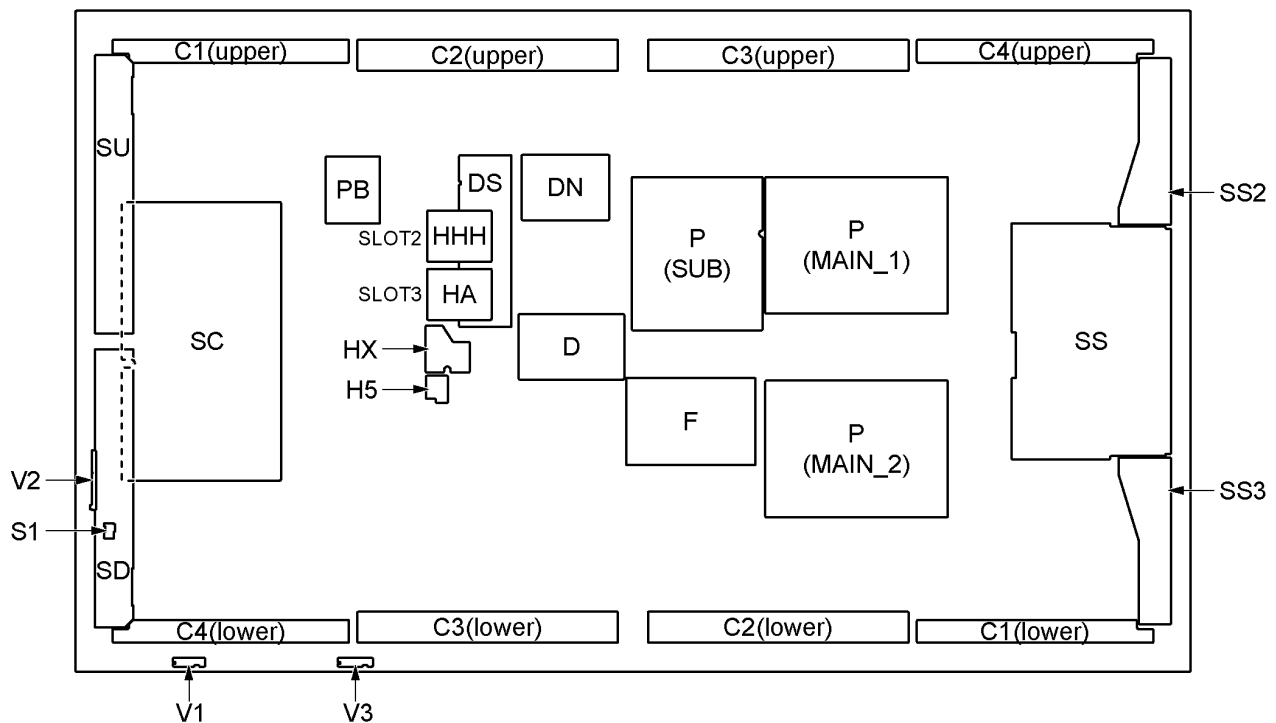
3 Service Navigation

3.1. Service Hint

Remove the Rear Cover



Remove : 99 screws (○) THEL065Z
16 screws (□) THEL0429



Board Name	Function	Board Name	Function
DN	Digital Signal Processor, Microcomputer	S1	Power switch
D	Format Converter, Plasma AI Processor Sub-Field Processor	C1 (upper)	Data drive (1) (upper)
		C2 (upper)	Data drive (2) (upper)
DS	Slot Interface (Audio / Video / Sync Input Switch), Sync Processor, Audio Processor, DC-DC Converter	C3 (upper)	Data drive (3) (upper)
		C4 (upper)	Data drive (4) (upper)
SC	Scan drive	C1 (lower)	Data drive (1) (lower)
SU	Scan out (Upper) Non serviceable. SU-Board should be exchanged for service.	C2 (lower)	Data drive (2) (lower)
		C3 (lower)	Data drive (3) (lower)
		C4 (lower)	Data drive (4) (lower)
SD	Scan out (Lower) Non serviceable. SD-Board should be exchanged for service.	P(MAIN_1)	Power supply
		P(MAIN_2)	Power supply
		P(SUB)	Power supply
SS	Sustain drive	F	ACIN / FILTER
SS2	Sustain out (Upper)	PB	Fan Control
SS3	Sustain out (Lower)	HX	PC / RS-232C
V1	LED-G, R	H5	Audio Out terminal
V2	Key switch	HHH	Dual HDMI terminal
V3	Remote receiver	HA	Component Video terminal (BNC)

3.2. Applicable signals

*Mark: Applicable input signal

	Signal name	Horizontal frequency (kHz)	Vertical frequency (Hz)	Component / RGB IN / PC IN (Dot clock (MHz))	DVI-D IN *8 (Dot clock (MHz))
1	525 (480) / 60i	15.73	59.94	* (13.5)	
2	525 (480) / 60p	31.47	59.94	* (27.0) *5	* (27.0)
3	625 (575) / 50i	15.63	50.00	* (13.5)	
4	625 (575) / 50p	31.25	50.00	* (27.0)	
5	625 (576) / 50p	31.25	50.00		* (27.0)
6	750 (720) / 60p	45.00	60.00	* (74.25)	* (74.25)
7	750 (720) / 50p	37.50	50.00	* (74.25)	* (74.25)
8	1,125 (1,080) / 60p	67.50	60.00	* (148.5) *1	* (148.5)
9	1,125 (1,080) / 60i	33.75	60.00	* (74.25) *1	* (74.25)
10	1,125 (1,080) / 50p	56.26	50.00	* (148.5) *1	* (148.5)
11	1,125 (1,080) / 50i	28.13	50.00	* (74.25) *1	* (74.25)
12	1,125 (1,080) / 24sF	27.00	48.00	* (74.25) *2	
13	1,125 (1,080) / 30p	33.75	30.00	* (74.25) *1	* (74.25)
14	1,125 (1,080) / 25p	28.13	25.00	* (74.25) *1	* (74.25)
15	1,125 (1,080) / 24p	27.00	24.00	* (74.25) *1	* (74.25)
16	1,250 (1,080) / 50i	31.25	50.00	* (74.25) *3	
17	2,048 × 1,080 / 24sF *7	27.00	48.00		
18	2,048 × 1,080 / 24p *7	27.00	24.00		
19	640 × 400 @70 Hz	31.46	70.07	* (25.17)	
20	640 × 480 @60 Hz	31.47	59.94	* (25.18) *6	* (25.18)
21	640 × 480 @72 Hz	37.86	72.81	* (31.5)	
22	640 × 480 @75 Hz	37.50	75.00	* (31.5)	
23	640 × 480 @85 Hz	43.27	85.01	* (36.0)	
24	800 × 600 @56 Hz	35.16	56.25	* (36.0)	
25	800 × 600 @60 Hz	37.88	60.32	* (40.0)	* (40.0)
26	800 × 600 @72 Hz	48.08	72.19	* (50.0)	
27	800 × 600 @75 Hz	46.88	75.00	* (49.5)	
28	800 × 600 @85 Hz	53.67	85.06	* (56.25)	
29	852 × 480 @60 Hz	31.47	59.94	* (33.54) *6	* (34.24)
30	1,024 × 768 @50 Hz	39.55	50.00		* (51.89)
31	1,024 × 768 @60 Hz	48.36	60.00	* (65.0)	* (65.0)
32	1,024 × 768 @70 Hz	56.48	70.07	* (75.0)	
33	1,024 × 768 @75 Hz	60.02	75.03	* (78.75)	
34	1,024 × 768 @85 Hz	68.68	85.00	* (94.5)	
35	1,066 × 600 @60 Hz	37.64	59.94	* (53.0)	* (53.0)
36	1,152 × 864 @60 Hz	53.70	60.00		* (81.62)
37	1,152 × 864 @75 Hz	67.50	75.00	* (108.0)	
38	1,280 × 768 @60 Hz	47.70	60.00	* (80.14)	
39	1,280 × 960 @60 Hz	60.00	60.00	* (108.0)	
40	1,280 × 960 @85 Hz	85.94	85.00	* (148.5)	
41	1,280 × 1,024 @60 Hz	63.98	60.02	* (108.0)	* (108.0)
42	1,280 × 1,024 @75 Hz	79.98	75.03	* (135.0)	
43	1,280 × 1,024 @85 Hz	91.15	85.02	* (157.5)	
44	1,366 × 768 @50 Hz	39.55	50.00		* (69.92)
45	1,366 × 768 @60 Hz	48.36	60.00	* (86.71)	* (87.44)
46	1,400 × 1,050 @60 Hz	65.22	60.00		* (122.61)
47	1,600 × 1,200 @60 Hz	75.00	60.00	* (162.0)	* (162.0)
48	1,600 × 1,200 @65 Hz	81.25	65.00	* (175.5)	
49	1,920 × 1,080 @60 Hz	67.50	60.00	* (148.5) *4	* (148.5)
50	1,920 × 1,200 @60 Hz	74.04	59.95		* (154.0)
51	Macintosh13" (640 × 480)	35.00	66.67	* (30.24)	
52	Macintosh16" (832 × 624)	49.72	74.54	* (57.28)	
53	Macintosh21" (1,152 × 870)	68.68	75.06	* (100.0)	

*1: Based on SMPTE 274M standard.

*2: Based on SMPTE RP211 standard.

*3: Based on SMPTE 295M standard.

*4: The input signal is recognized as 1,125 (1,080) / 60p.

*5: When selected the RGB format and 525p signal input to the Mini D-sub 15P terminal, it is recognized as VGA 60Hz signal.

*6: When inputted VGA 60Hz format signal from the other than Mini D-sub 15P terminal, it is recognized as 525p signal.

*7: Based on SMPTE 292M and 372M standards. These signals can be received when the Dual Link HD-SDI Terminal Board (TY-FB11DHD) is installed.

*8: These signals can be received when the DVI-D Terminal Board (TY-FB11DD) is installed.

Note: Signals without above specification may not be displayed properly.

VIDEO input (HDMI)

Signal format		Vertical frequency (Hz)	Horizontal frequency (kHz)	Dot clock (MHz)	Number of active pixels	Total number of pixels	Number of active lines	Total number of lines
1	VGA60	59.94	31.47	25.18	640	800	480	525
2	525/60p	59.94	31.47	27.00	720	858	480	525
3	625/50p	50.00	31.25	27.00	720	864	576	625
4	750/60p	60.00	45.00	74.25	1280	1650	720	750
5	750/50p	50.00	37.50	74.25	1280	1980	720	750
6	1125/60i	60.00	33.75	74.25	1920	2200	1080	1125
7	1125/50i	50.00	28.13	74.25	1920	2640	1080	1125
8	1125/60p*	60.00	67.50	148.50	1920	2200	1080	1125
9	1125/50p*	50.00	56.26	148.50	1920	2640	1080	1125
10	1125/24p*	24.00	27.00	74.25	1920	2750	1080	1125

*Not compatible with HDMI Terminal Board (TY-FB8HM).

Audio signal Linear PCM : 48/44.1/32 kHz


4 Specifications

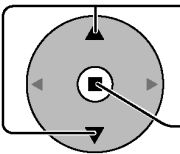
Power Source	120 V AC, 50/60Hz	
Power Consumption		
Power on	1250 W	
Stand-by condition	Save OFF 1.0 W, Save ON 0.5 W	
Power off condition	0.2 W	
Plasma Display panel	Drive method: AC type 85-inch, 16:9 aspect ratio	
Screen size	74.3" (1,889 mm) (W) × 41.8" (1,062 mm) (H) × 85.3" (2,167 mm) (diagonal)	
(No. of pixels)	2,073,600 (1,920 (W) × 1,080 (H)) [5,760 × 1,080 dots]	
Operating condition		
Temperature	32 °F - 104 °F (0 °C - 40 °C)	
Humidity	20 % - 80 %	
Applicable signals		
Scanning format	525 (480) / 60i • 60p, 625 (575) / 50i • 50p, 750 (720) / 60p • 50p, 1125 (1080) / 60i • 60p • 50i • 50p • 24p • 25p • 30p • 24sF, 1250 (1080) / 50i	
PC signals	VGA, SVGA, XGA, SXGA UXGA (compressed) Horizontal scanning frequency 15 - 110 kHz Vertical scanning frequency 48 - 120 Hz	
Connection terminals		
HDMI A-B	TYPE A Connector × 2	
COMPONENT / RGB IN	Y / G (BNC)	with sync 1.0 Vp-p (75-ohm)
	P _B /B (BNC), P _R /R (BNC)	0.7 Vp-p (75-ohm)
	AUDIO IN (RCA PIN JACK × 2)	0.5 Vrms
PC IN	(HIGH-DENSITY Mini-D-SUB 15PIN)	Y or G with sync 1.0 Vp-p (75-ohm) Y or G without sync 0.7 Vp-p (75-ohm)
		B / P _B / C _B : 0.7 Vp-p (75-ohm)
		R / P _R / C _R : 0.7 Vp-p (75-ohm)
		HD / VD: 1.0 - 5.0 Vp-p (high impedance)
	AUDIO IN (M3 JACK)	0.5 Vrms
SERIAL	EXTERNAL CONTROL TERMINAL (D-SUB 9PIN)	RS-232C COMPATIBLE
AUDIO OUT	RCA PIN JACK × 2 (L / R)	
	OUTPUT LEVEL : VARIABLE (-∞ - 0 dB)	[INPUT 1KHz / 0dB, 10Kohm Load]
Accessories Supplied		
Remote Control Transmitter	EUR7636070R	
Batteries	AA Size × 2	
Fixing band	TMME203 × 2	
Clamper	TMM15412-2 × 1	
Dimensions (W × H × D)	79.4" (2,015 mm) × 47.1" (1,195 mm) × 3.9" (99 mm)	
Mass (weight)	approx. 260.2 lbs	

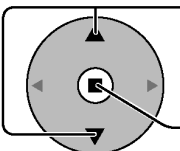
Note:

- Design and specifications are subject to change without notice. Mass and dimensions shown are approximate.

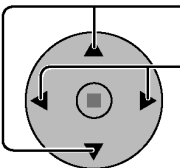
5 Operating Instructions


1  Press to display the SET UP menu.

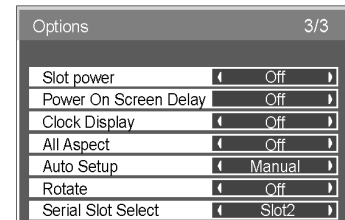
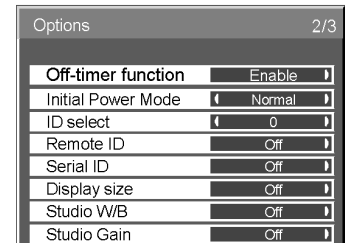
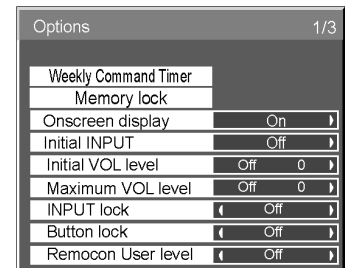
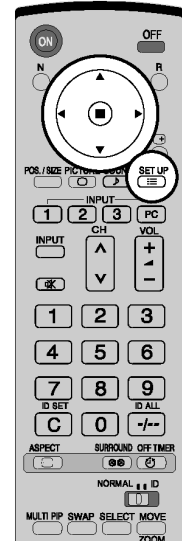
2  Press to select "OSD LANGUAGE".
Press for more than 3 seconds.

3  Press to select "Options".
Press to display the Options menu.



4  Press to select your preferred menu.
Press to adjust the menu.

5  Press to exit from Options menu.



Option Menu for GPF12D series

GPF12D chassis series have special function and operation setting facility called Option Menu. This Option Menu is useful for special function required customers. This should be set at the installation stage.

Option menus	default setting	Contents
Weekly Command Timer	---	Sets Weekly Command Timer.
Onscreen display	On	Enable/Disable to display input mode indication after power on and no signal indication.
Initial INPUT	Off	Sets the initial input mode when the power is turned on. Allow input mode selection while power is on.
Initial VOL level	Off	Sets the initial volume level when the power is turned on. Allow Volume control while power is on.
Maximum VOL Level	Off	Sets the maximum volume to desired level. Volume cannot exceed this level.
INPUT lock	Off	Fixes the input mode to AV, Component/RGB or PC. Can not change input mode by input selection key.
Button lock	Off	Enable/Disable bottom operation buttons (Input, Menu, Enter and/or volume up/down)
Remocon User Level	Off	Remote key invalidation. Off: Valid key is all key of remote. User1: Valid key are only Stand-by (ON/OFF), Input, Direct input, Picture, Surround, Sound mute On/Off, and volume adjustment. User2: Valid key is only Stand-by (ON/OFF). User3: All keys are null and void
Off-timer function	Enable	Off-timer operation Enable/Disable.
Initial Power Mode	Normal	Sets the power mode of the unit for when the power recovers from failure or after plugging off and in again.
ID select	0	Set ID number from 0 to 100.
Remote ID	Off	Remote ID function On/Off. (While the Remote ID on, standard remote function can not control the unit.)
Serial ID	Off	Serial ID function On/Off
Display size	Off	Display size function On/Off
Studio W/B	Off	Studio W/B function On/Off
Studio Gain	Off	Studio Gain function On/Off
Slot power	Off	Sets the slot power mode while the power is turned on. Allow Optional Terminal Board insert Slots while power is on.
Power On Screen Delay	Off	You can set the power-on delay time of the displays to reduce the power load, when you press \odot/I to turn on the multiple displays that are set together, for example, on MULTI DISPLAY system. Set each display's setting individually.
Clock Display	Off	Clock Display function On/Off.
All Aspect	Default	Aspect mode: default/All aspect mode.
Auto Setup	Manual	Sets the operational mode of the automatic position adjustment in the POS./SIZE menu.
Rotate	Off	Rotate function On/Off
Serial Slot Select	Slot2	Selects the slot which communicates serial. Note: The setting of an external command can be set only from the fixed serial terminal.

Note:

When both main unit buttons and remote control are disabled due to the "Button lock", "Remocon User level" or "Remote ID" adjustments, set all the values "Off" so that all the buttons are enabled again.

Press the "Volume down" button on main unit together with "R" button on the remote control and hold for more than 5 seconds. The "SHIPPING" menu is displayed and the lock is released when it disappears.

6 Service Mode

6.1. CAT (Computer Aided Test) mode

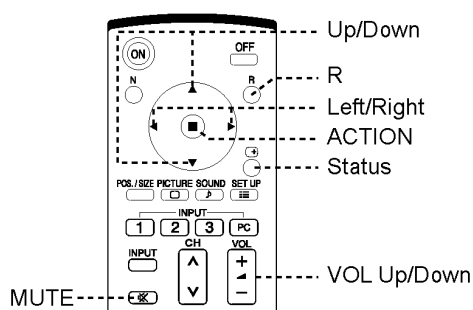
CAT mode menu

CAT panel sys. 8. 2	
IIC Mode	◀
CD Mode	◀
SD Mode	◀
MS Mode	◀
ID Mode	◀

Remote control

Mode	Function	Access button
IIC	Service Alignment	Action
CD (Complete Diagnostics)	Software version information EEPROM edit	Mute more than 3 seconds
SD (Status Display)	MTBF parameter	Action
MS Mode	Market Select	Mute more than 3 seconds
ID Mode	LSI Check	Mute more than 3 seconds

Remote control



How to access the CAT mode.

Press and hold the **Volume down / - button** on the front panel of the unit and press the **Status button** on the remote control 3 times quickly within 2 second, this will place the unit into the CAT mode.

To exit the **CAT mode**, access the **ID mode** and switch off the main power.

6.1.1. IIC mode

Select the IIC mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **Action button** on the remote control.

OSD

1024x768/60Hz	
16:9 DYNAMIC Hi	
PANEL W/B Adj.	◀ Subject
R DRIVE	◀ Item
C0 C0	◀ New data
▲	Original data

How to use the IIC mode.

1. Select the alignment **Subject** by **Up/Down buttons** on the remote control.
2. Select the alignment Item by **Left/Right buttons** on the remote control.
3. Adjust **optimum setting** by **Volume Up/Down buttons** on the remote control.
4. The **data is memorized** when press the **R button** on the remote control or change the alignment Subject (or Items).

Subject and item are mentioned on "IIC mode structure".

To exit the IIC mode, press the **R button** on the remote control.

6.1.2. CD mode

Select the CD mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **Mute button** on the remote control more than 3 seconds.

CD	
MONITOR-MCU	1. 0000F12 OK
MONITOR-EEPROM	53. 00 1 16 2B
MONITOR-EEPROM Change Addr	00 01
Data	01 01
PANEL-MCU	1. 08
PANEL-EEPROM	30. 27
PANEL-FPGA	11. 02
PANEL-PDROM	30. 09
BOARD EEPROM *****	-- -- -- --
BOARD --/--/--	-- -- -- --
PTCT	00. 00. 00. 00. 00.

Factory use

New data

Original data

SOS history

Memory data change

Address ← Change by **Up/Down buttons** on the remote control.

Change by **Left/Right buttons** on the remote control.

Data ← Change by **VOL Up/Down buttons** on the remote control.

The data is memorized when switch off the main power.

To exit the CD mode, press the **R button** on the remote control.

6.1.3. SD mode

Select the SD mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **Action button** on the remote control.

OSD

SD	
Input command check	3 3 3 3 66 66 66 39 FF 66 39 3 3 3 3 3 3 3 3 3 3
MTBF Parameter	WT <input type="text" value="22"/> PT <input type="text" value="0"/>
Condition	<input type="text" value="+ 28"/>
Remote Control Mode	<input type="text" value="A"/> <input type="text" value="B"/>

History of remote control command. (Factory use).

Cumulative Time for power on condition. (unit :hour)

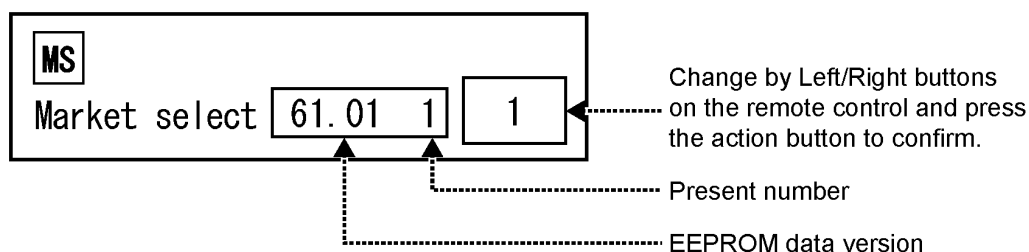
Temperature of D-Board

Counter of power on. (unit :time)

To exit the SD mode, press the **R button** on the remote control.

6.1.4. MS mode

Select the MS mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **Mute button** on the remote control more than 3 seconds.



To exit the MS mode, press the **R button** on the remote control.

Caution:

Market Select should be set after exchange of DN-Board.

Destination number

Number	Destination	Number	Destination
0	Japan	16	--
1	North America	17	--
2	Europe	18	China
3	Others	19	China (Hotel)
4	Britain	20	Russia
5	Taiwan	21	Russia (Hotel)
6	Thailand	22	Hong Kong
7	--	23	--
8	Japan (Hotel)	24	--
9	North America (Hotel)	25	--
10	Europe (Hotel)	26	--
11	--	27	--
12	Britain (Hotel)	28	Middle East/Hong Kong
13	--	29	Middle East/Hong Kong (Hotel)
14	Thailand (Hotel)	30	Australia
15	--	31	Australia (Hotel)

Default setting

Number	Destination
1	North America

6.1.5. ID mode

Select the ID mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **Mute button** on the remote control more than 3 seconds.

ID

IIC1

IIC2

IIC3

IIC4

DN

IC4703 OK H90

IC4001 OK H61

IC4201 OK H56

IC4010 OK H62

DS

IC8181 OK H51

IC3001 OK H22

IC3005 OK H65

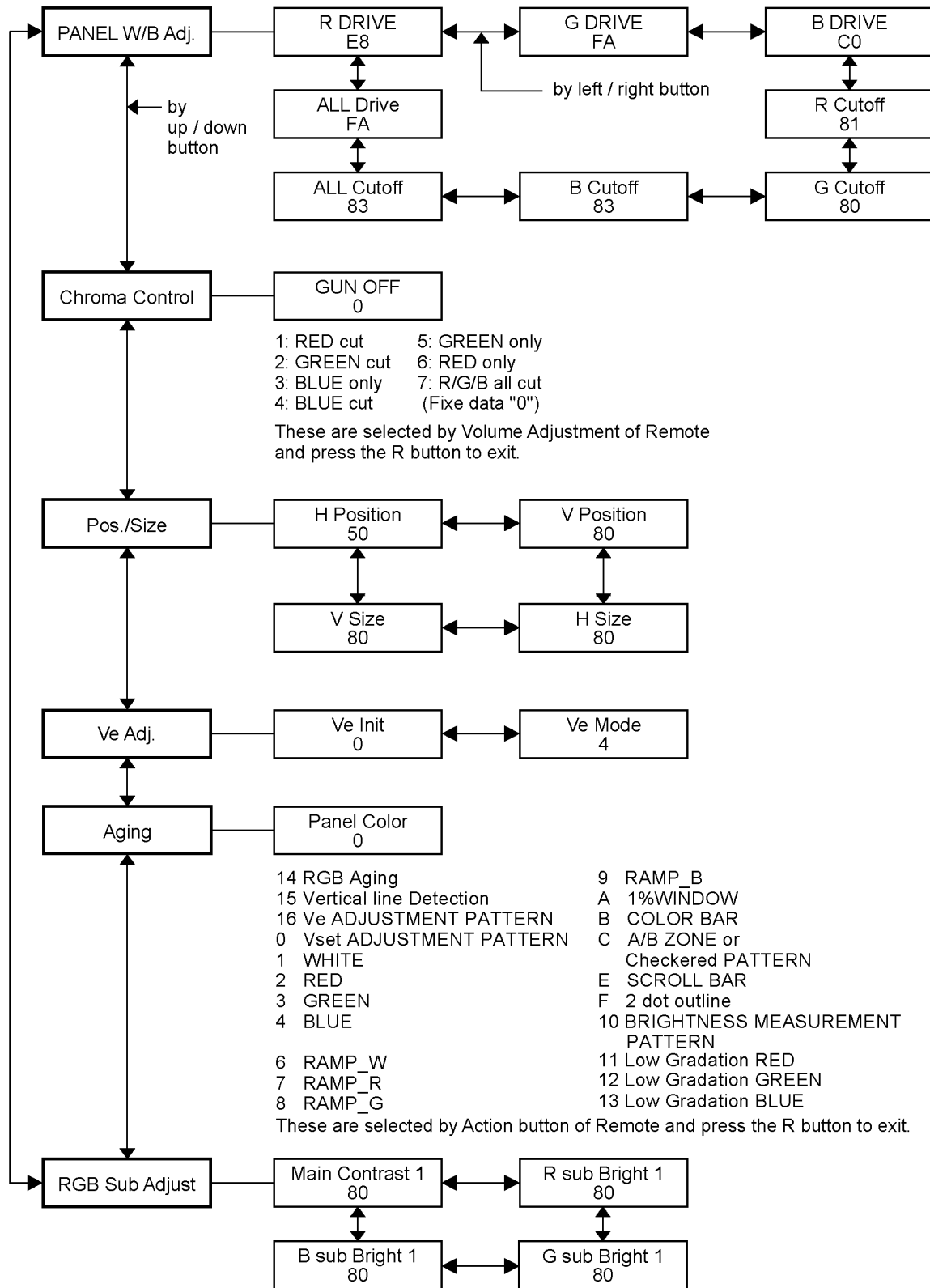
IC2303 OK H21

D

PANEL OK

To exit the ID mode, press the **R button** on the remote control.

6.2. IIC mode structure (following items value is sample data)



7 Troubleshooting Guide

7.1. Self Check

7.1.1. Display Indication

1. Self-check is used to automatically check the bus line controlled circuit of the Plasma display.
2. To get into the Self-check mode, press the **volume down** button on the customer controls at the bottom of the set, at the same time pressing the **OFF-TIMER** button on the remote control, and the screen will show.

If the IIC ports have been checked and found to be incorrect

Or not located then " - - " will appear in place of "OK"

"01" in the line of the "PTCT" means the number of blinks of the Power LED is 1. (Reference to 7.1.2)

"H09" in the line of the "PTCT" is the error code.

To exit the CAT mode switch off the main power.

Note:

The line of the "PTCT" displays when you get into the Self-check mode for the first time only after the Power LED blinks.

ID	IIC1	IIC2	IIC3	IIC4
DN	IC4703	OK H90	DS	IC8181
	IC4001	OK H61		OK H51
	IC4201	OK H56		IC3001
	IC4010	OK H62		OK H22
				IC3005
				OK H65
				IC2303
				OK H21
			D	PANEL
				OK
PTCT	01	H09		

7.1.2. Power LED Blinking timing chart

1. Subject

Information of LED Blinking timing chart.

2. Contents

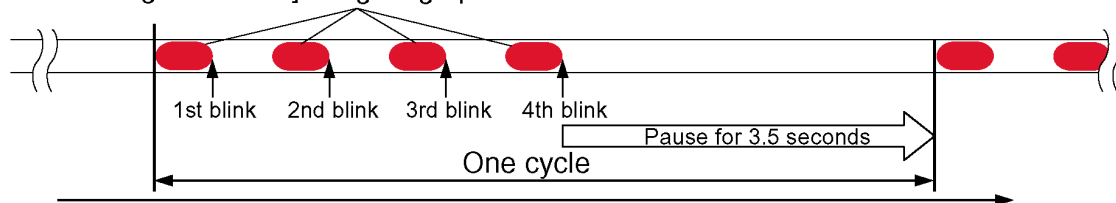
When an abnormality has occurred to the unit, the protection circuit operates and resets to the stand by mode. At this time, the defective block can be identified by the number of blinks of the Power LED on the front panel of the unit.

Blinking times	Blinking timing	Contents & Check point	Check point
1	<p>Once 3 sec</p> <p>--- Light --- No Light</p>	No particular check point	—
2		(PTCT 02 H09) * 15V SOS	P-Board (Main_1) D-Board
3		(PTCT 12 H09) * F15V SOS 15V SOS	DN-Board DS-Board
4		3.3V SOS	D-Board
5		POWER SOS	P-Board (Main_1) P-Board (Main_2)
6		5V SOS	P-Board (Sub) D-Board
7		Driver SOS1	SC-Board
8		Driver SOS2	SC-Board SU-Board SD-Board
9		Driver SOS3	SS-Board SS2-Board SS3-Board
10		Communication Error between Panel-MPU and SCW4-MPU	D-Board
11		Terminal Board SOS	Terminal Board DS-Board
13		FAN SOS	FAN PB-Board DN-Board
13		3.3 / 2.5 / 1.8 / 1.2 V SOS	DN-Board

* Refer to 7.1.1 Display Indication

About blinking LED

[When blinking four times] Lighting up

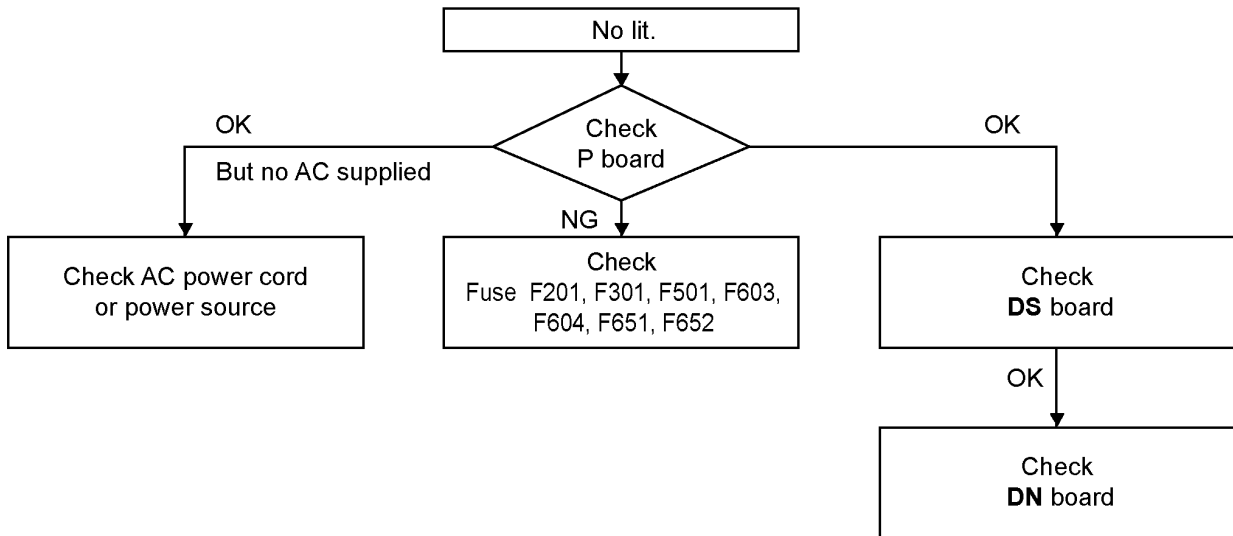


7.2. No Power

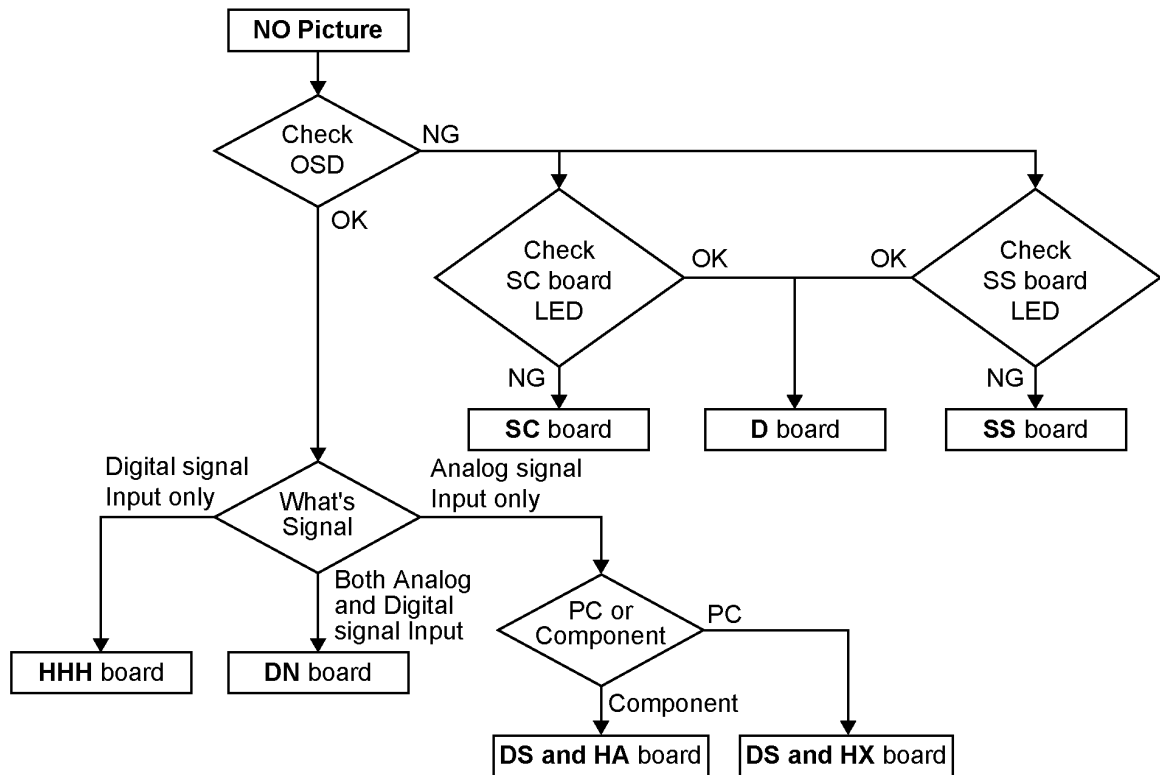
First check point

There are following 3 states of No Power indication by power LED.

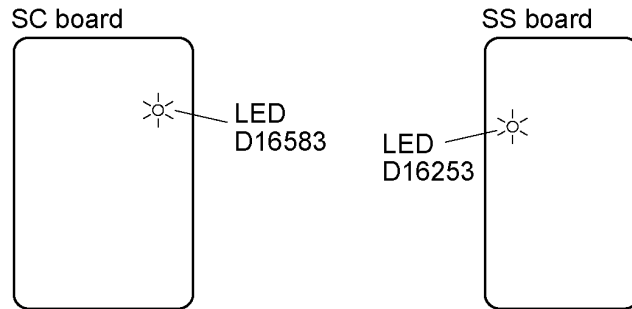
1. No lit.
2. Green is lit then turns red blinking a few seconds later.
3. Only red is lit.



7.3. No Picture

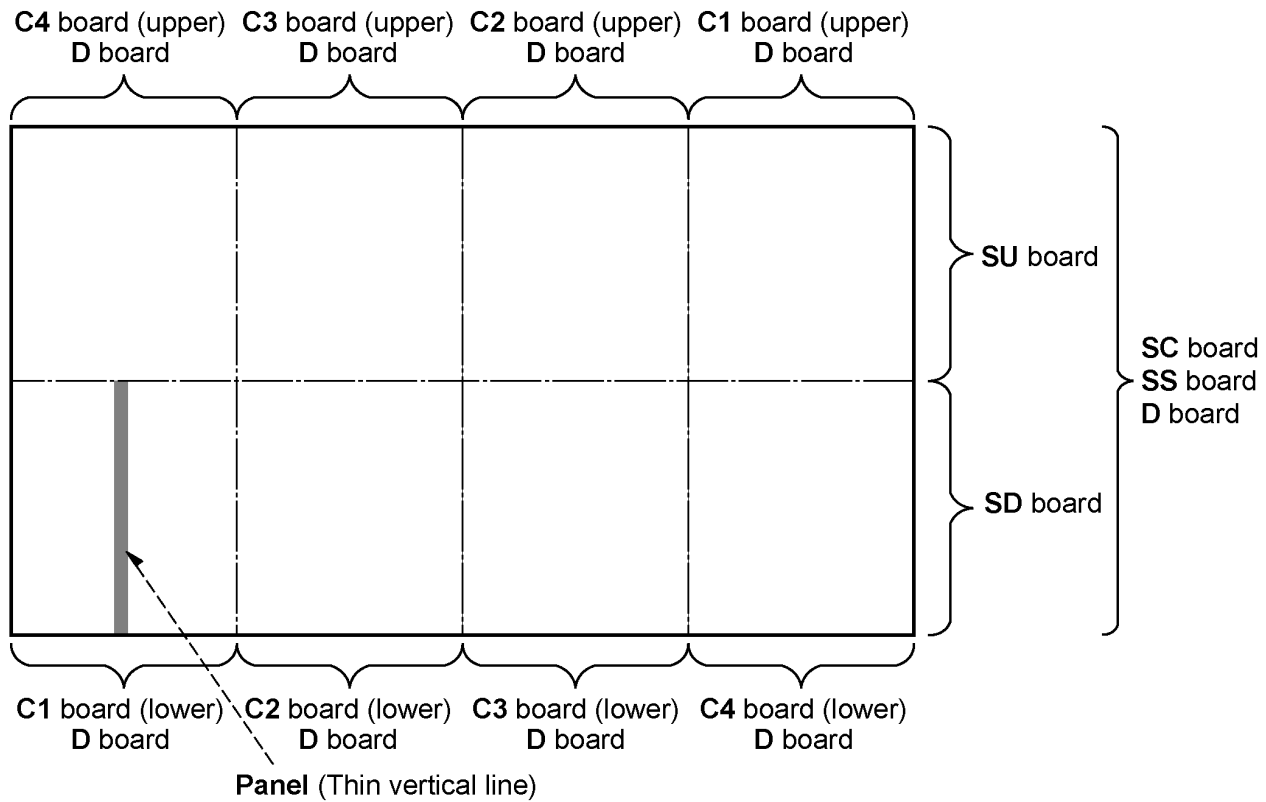


Drive circuits LED indicator



7.4. Local screen failure

Plasma display may have local area failure on the screen. Fig - 1 is the possible defect P.C.B. for each local area.



< Local screen failure chart >

Fig - 1

8 Service Fixture & Tools

8.1. Service Stand

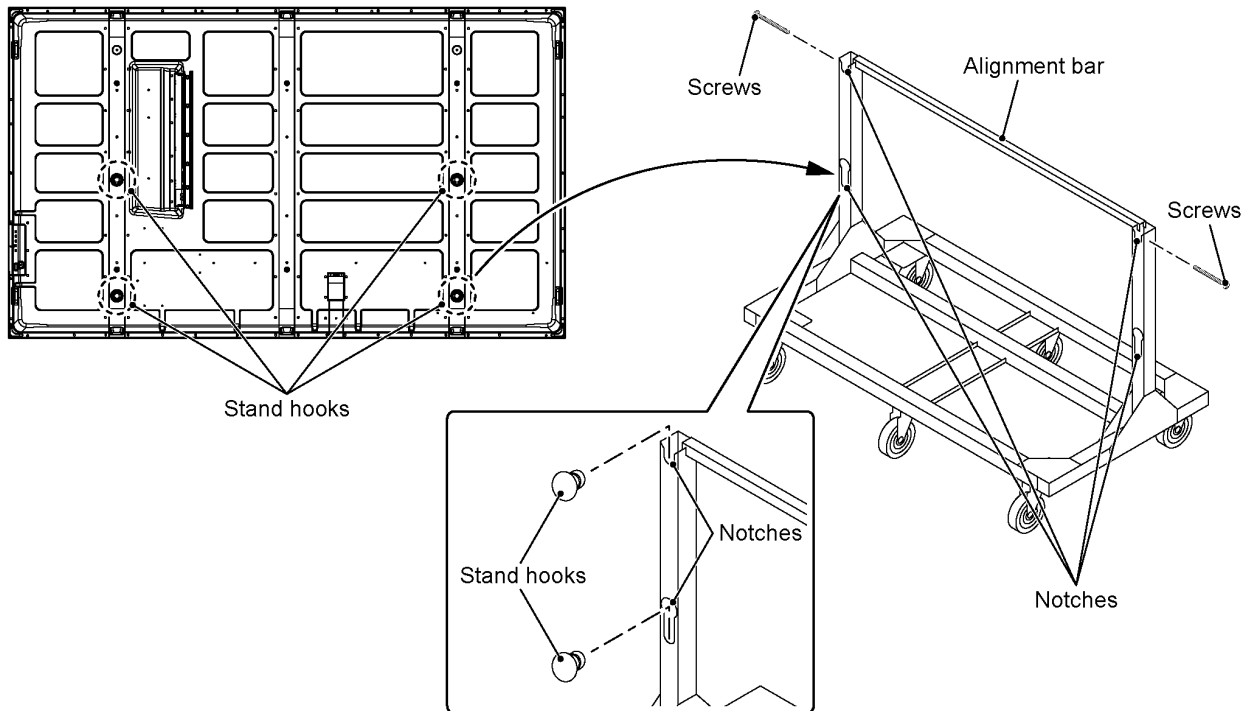
When conducting repairs and servicing, install the Plasma Display to the Service Stand.

Part number:

TZSA07021

Installation of plasma display:

1. Lock 2 casters.
2. Check that the Alignment bar is set to the Service Stand.
3. Remove 2 screws.
4. Join the stand hooks to the 4 notches on the Service Stand.



5. Tighten 2 screws.
6. Remove the Alignment bar, then start conducting repairs and servicing.
7. After conducting repairs and servicing, remove the plasma display from the Service Stand in reverse order.

Note: Do not over-tighten the screws, as this could cause the fixtures to deform the Service Stand.

8.2. SC jig

Purpose:

To find the failure board (SC or SU/SD) when the power LED is blinking 7 times.

SC jig:

Jumper connector to connect to SC50 connector on SC board

Part number:

TZSC09187

How to use:

Caution: Remove SC jig from SC board after inspection.

1. Remove all connector between SC board and SU/SD board to isolate SC board from both SU and SD board electrically.

Note: The board will be damaged if all connector is not removed (for example; remove connector only for SU board and stay connecting with SD board. The board will be damaged.)

2. Connect SC jig to connector SC51 at left bottom side of SC board.

3. Turn on the TV/Display Unit and confirm the power LED blinking.

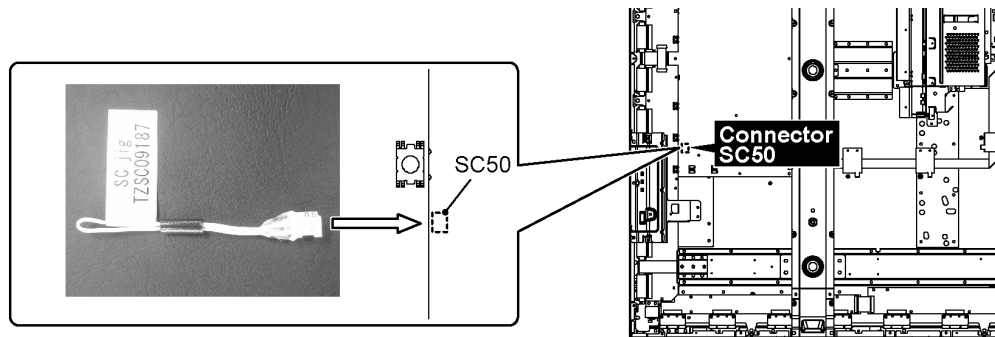
LED blinking: Possible cause of failure is in SC board

No LED blinking (Lighting or no lighting): Possible cause of failure is in SU or SD board

4. After inspection, turn off the TV/Display Unit and wait a few minutes to discharge.

5. Remove SC jig from SC board.

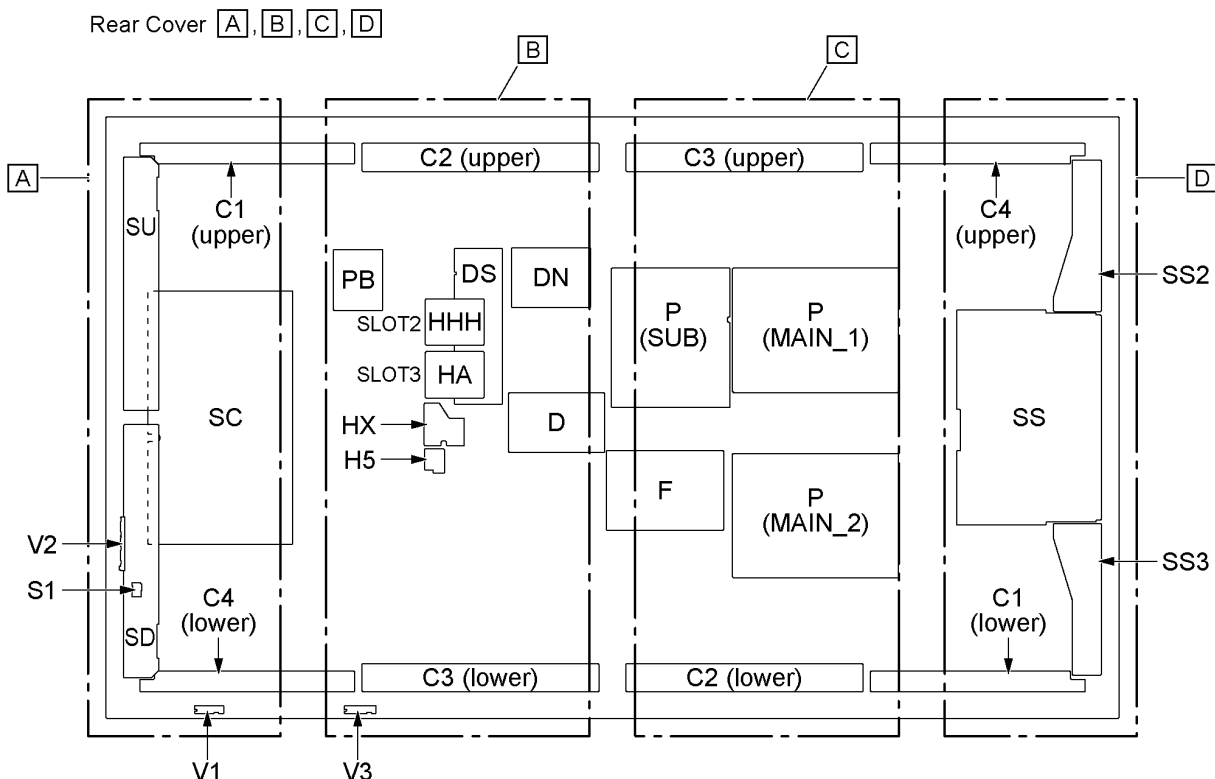
Remark: This SC jig can be used for all 2009 Plasma TV and Plasma Display.



9 Disassembly and Assembly Instructions

- To disassemble P.C.B., wait for 10 minute after power was off for discharge from electrolysis capacitors.
- ○, □, ▲ and ⇧ marks indicate screw positions.

9.1. Rear Cover and Board

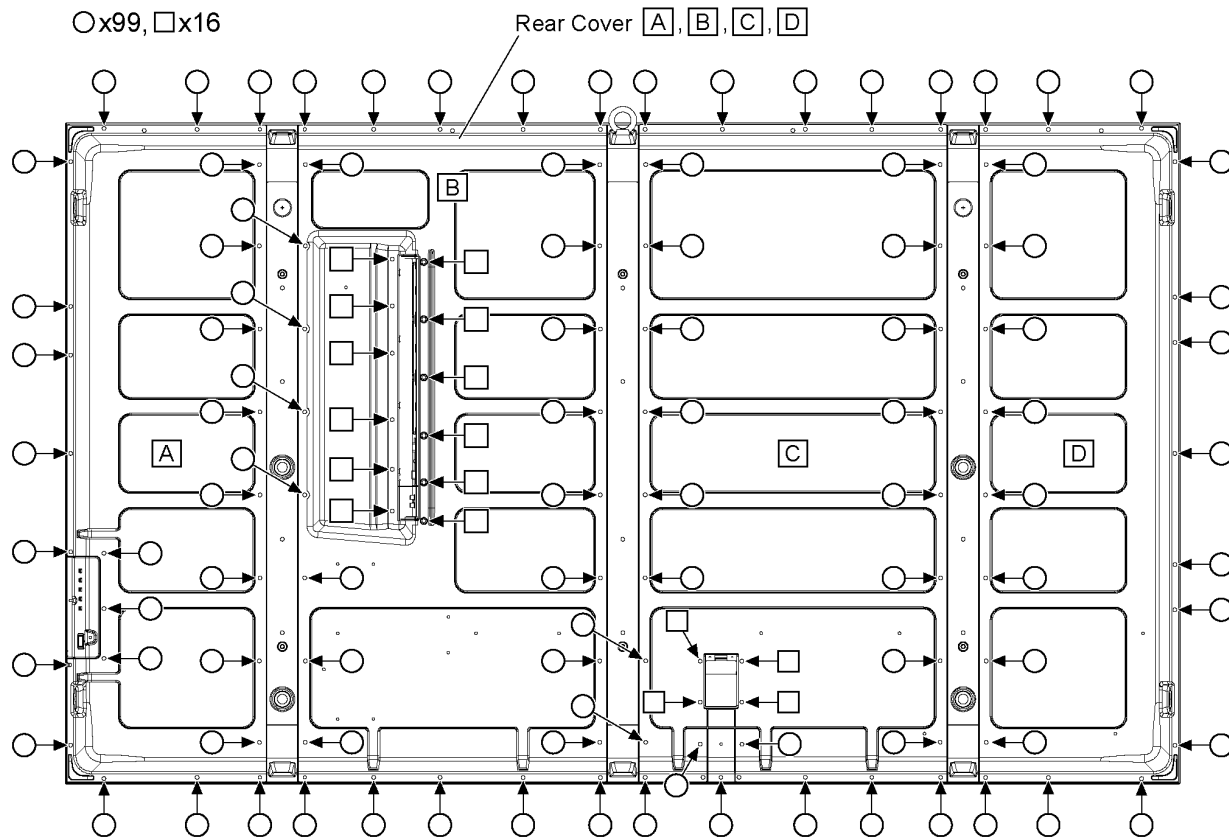


Rear Cover required to remove for each board exchange.

Board Name	Rear Cover
D-Board	B , C
DS-Board	B
SS-Board	D
SC-Board	A
SU-Board	A
SD-Board	A
C1-Board (upper)	A , B
C2-Board (upper)	B , C
C3-Board (upper)	B , C
C4-Board (upper)	C , D
C1-Board (lower)	C , D
C2-Board (lower)	B , C
C3-Board (lower)	B , C
C4-Board (lower)	A , B
H5-Board	B
S1-Board	A
SS2-Board	D
SS3-Board	D
V1-Board	A , B , C , D
V2-Board	A
V3-Board	A , B , C , D
PB-Board	B
P-Board (MAIN_1)	C
P-Board (MAIN_2)	C
P-Board (SUB)	B , C
F-Board	B , C
HX-Board	B

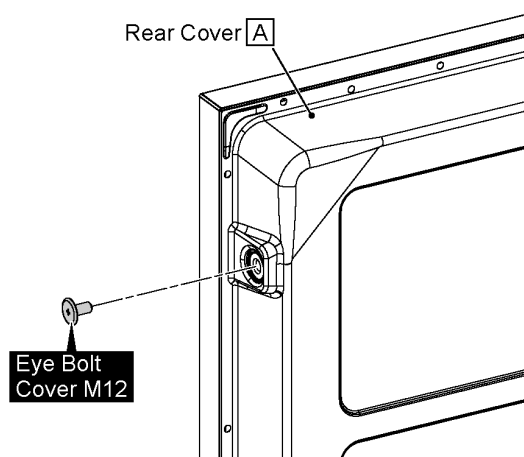
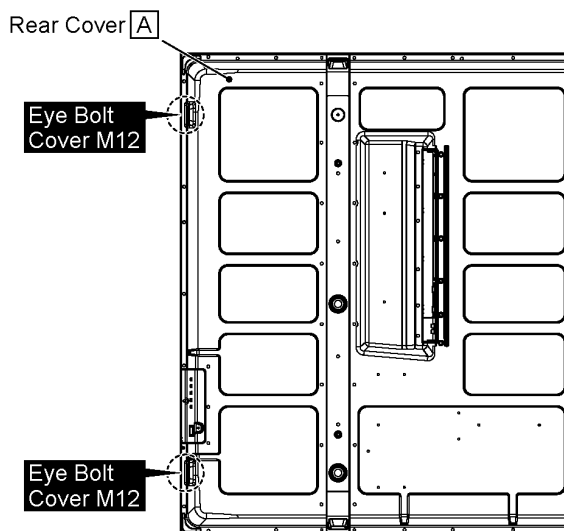
Board Name	Rear Cover
HA-Board	Unnecessary
DN-Board	B
HHH-Board	Unnecessary

9.2. Location of Rear Cover screws

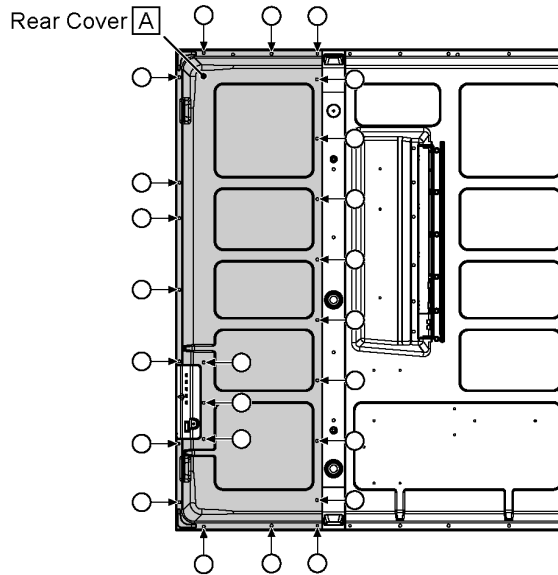


9.2.1. Removal of Rear Cover (**A**)

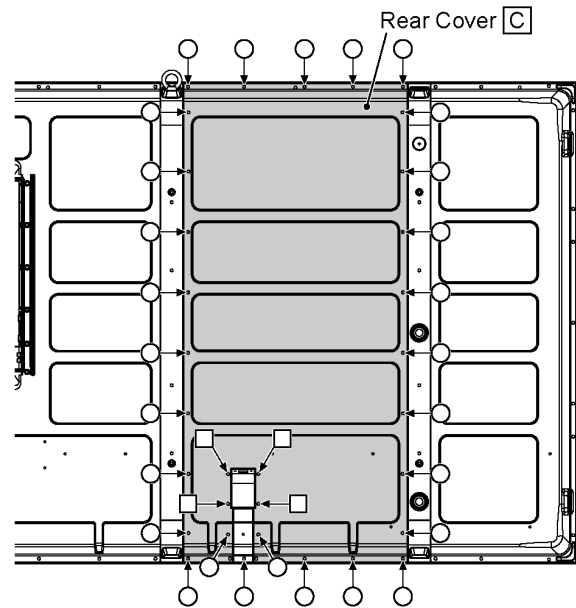
1. Remove Eye Bolt Covers M12.



2. Remove screws (×24 ○) and then remove the Rear Cover (A).

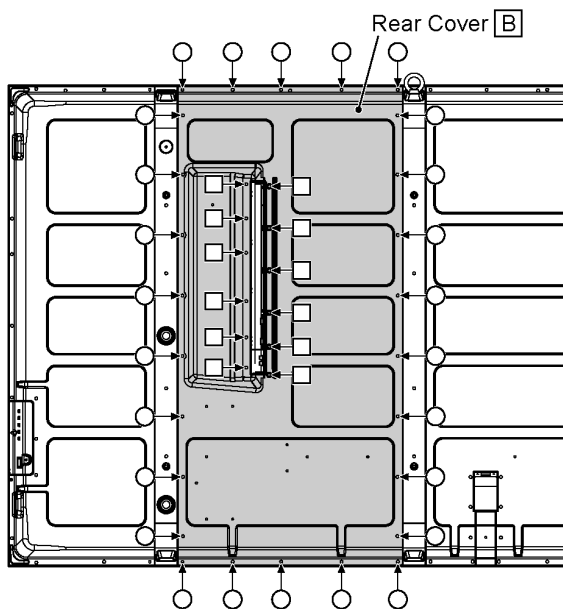


Rear Cover (C).



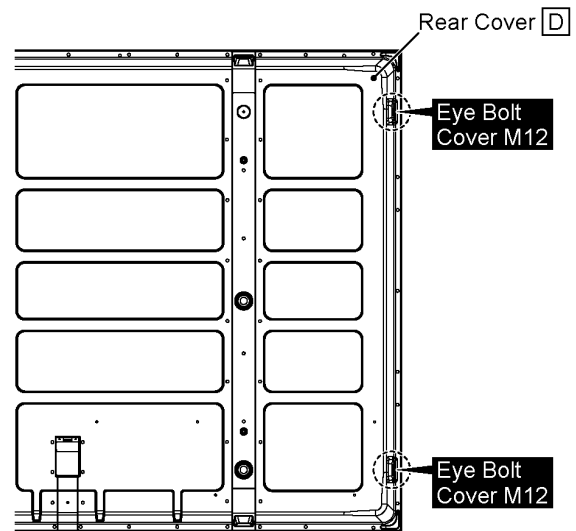
9.2.2. Removal of Rear Cover (B)

1. Remove screws (×26 ○, ×12 □) and then remove the Rear Cover (B).



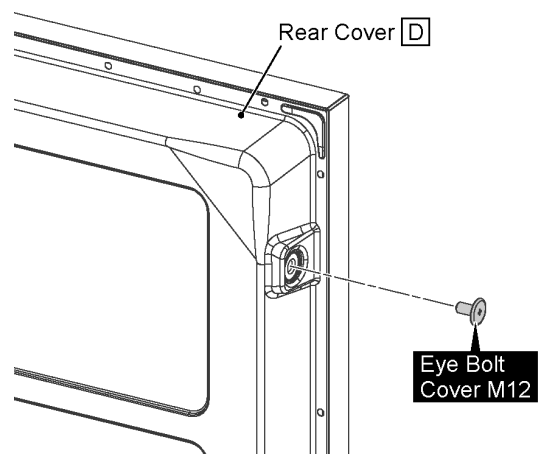
9.2.4. Removal of Rear Cover (D)



1. Remove Eye Bolt Covers M12.

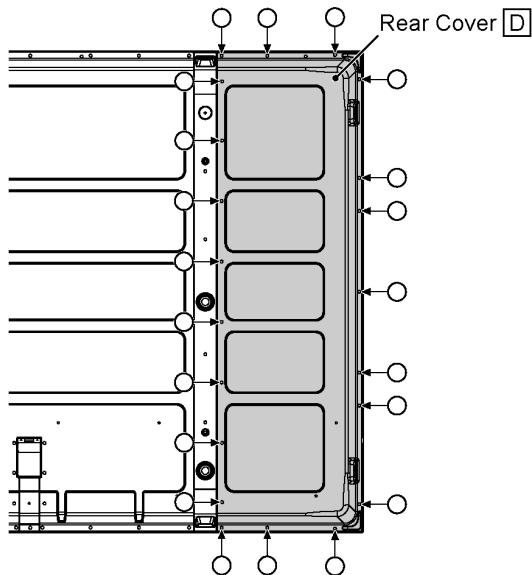


9.2.3. Removal of Rear Cover (C)

1. Remove screws (×28 ○, ×4 □) and then remove the

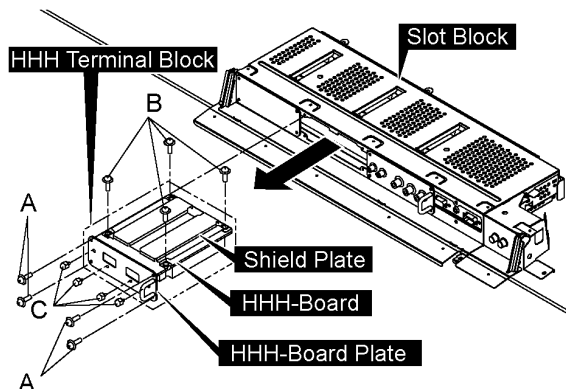


- Remove screws (×21 ) and then remove the Rear Cover ().



9.3. Removal of HHH-Board

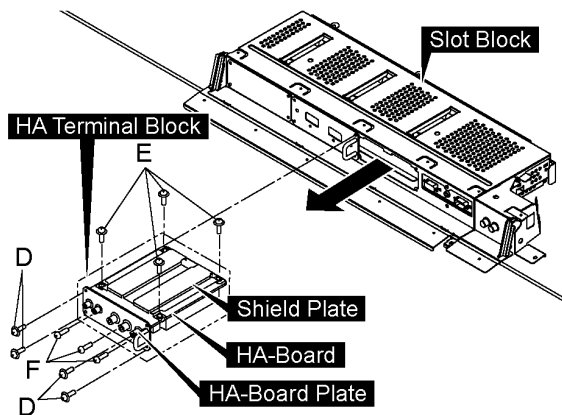
- Remove 4 screws (A) and then remove the HHH Terminal Block.
- Remove 4 screws (B).
- Remove 4 screws (C) and then remove HHH-Board.



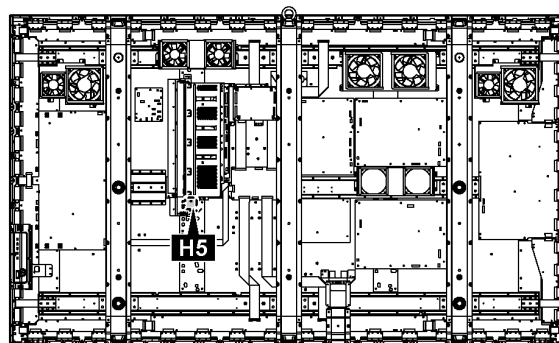
9.4. Removal of HA-Board

- Remove 4 screws (D) and then remove the HA Terminal Block.
- Remove 4 screws (E).

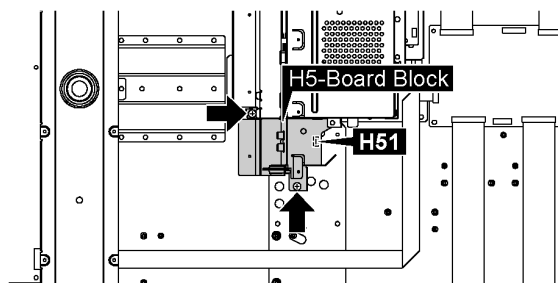
- Remove 3 screws (F) and then remove HA-Board.



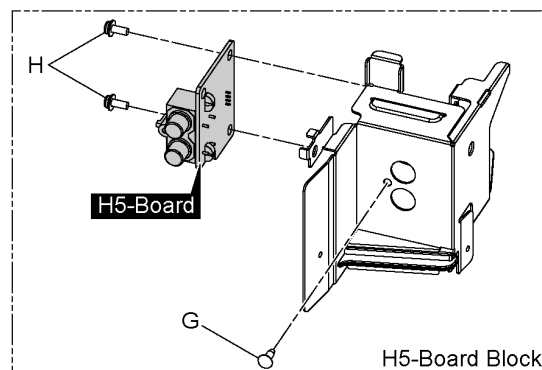
9.5. Removal of H5-Board



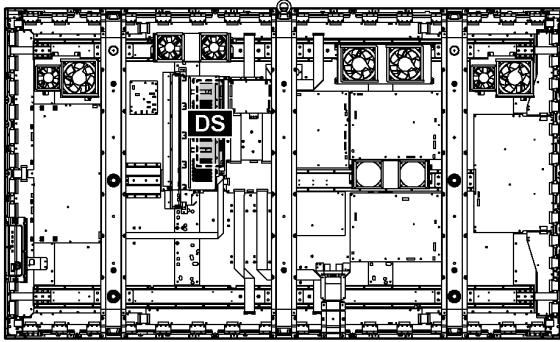
- Remove 2 screws and then remove H5-Board Block.
- Disconnect the connector (H51).



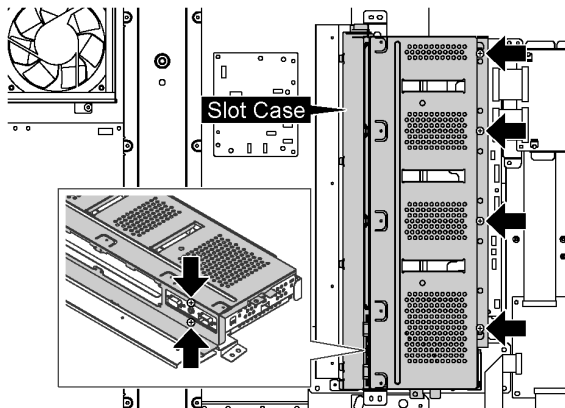
- Remove 1 screw (G).
- Remove 2 screws (H) and then remove H5-Board.



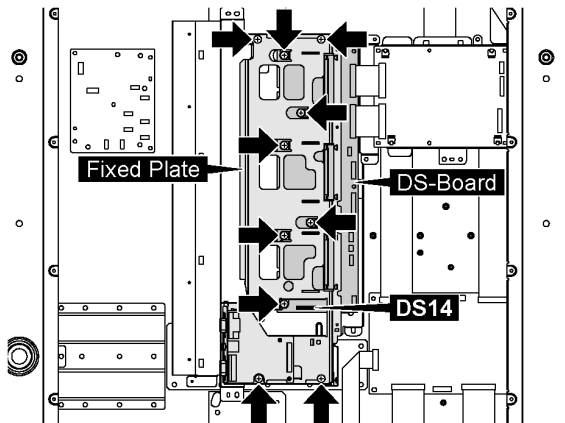
9.6. Removal of DS-Board



1. Remove the HA Terminal Block and the HHH Terminal Block.
(Refer to Removal of HA-Board and HHH-Board)
2. Remove H5-Board Block.
(Refer to Removal of H5-Board)
3. Remove 6 screws and then remove the Slot Case.

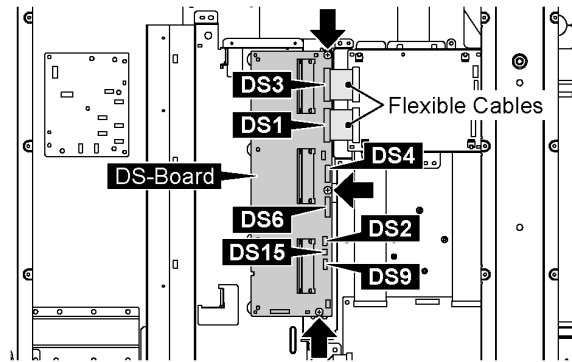


4. Disconnect the connector (DS14).
5. Remove 10 screws and then remove the Fixed Plate

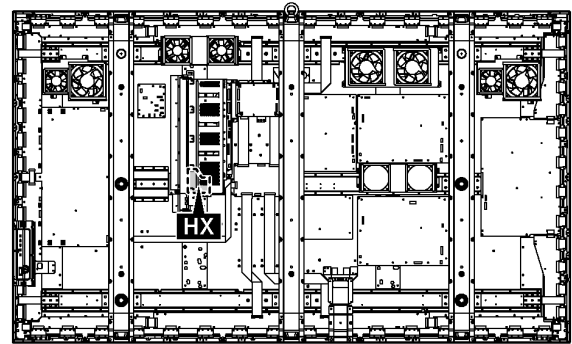


6. Disconnect the connectors (DS2, DS4, DS6, DS9, DS15).
7. Remove the flexible cables from the connectors (DS1, DS3).

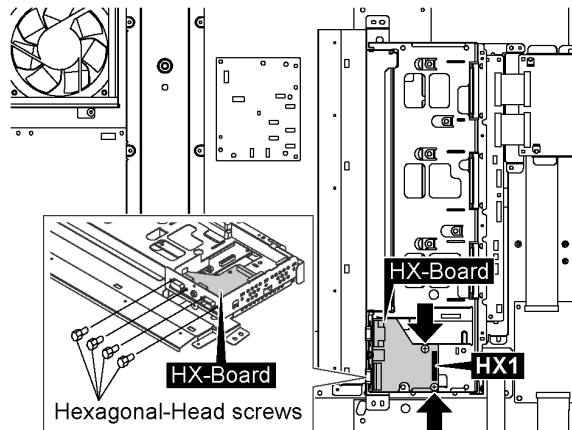
8. Remove 3 screws and then remove DS-Board.



9.7. Removal of HX-Board

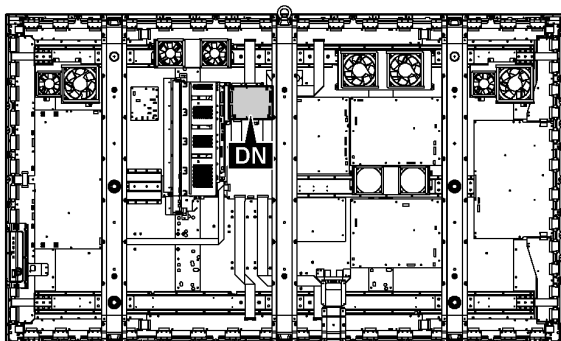


1. Remove the Slot Case.
(Refer to Removal of DS-Board)
2. Disconnect the connector (HX1).
3. Remove 4 Hexagonal-Head screws and 2 screws and then remove HX-Board.

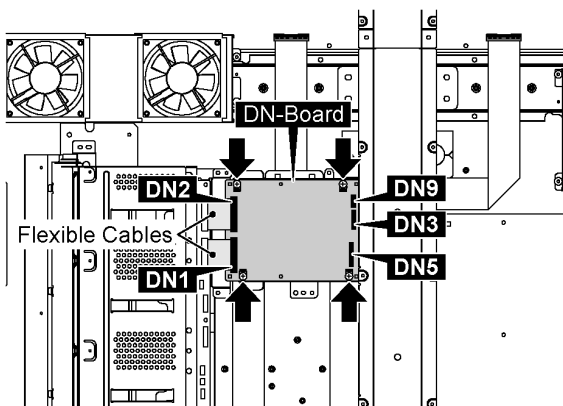


9.8. Removal of DN-Board

Check that no bright points appears by Ve Life adjustment after both D and DN board exchange.



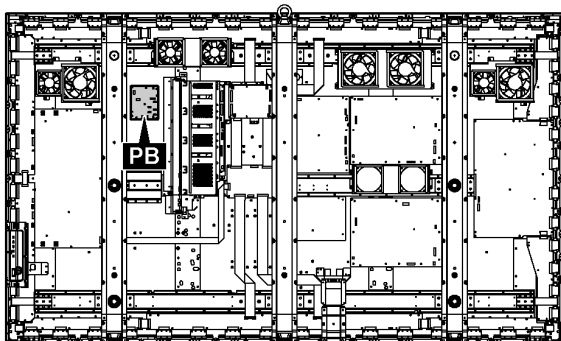
1. Disconnect the connectors (DN3, DN5, DN9).
2. Remove the flexible cables from the connectors (DN1, DN2)
3. Remove 4 screws and then remove DN-Board.



Note:

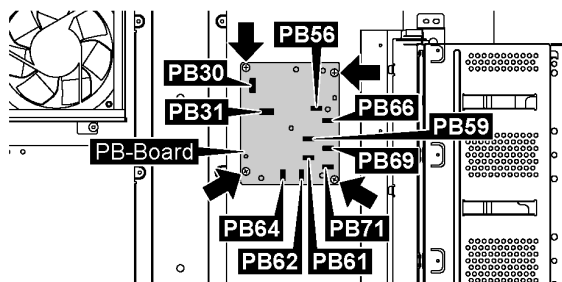
A re-setup of the destination is performed by MS mode after DN-Board exchange.

9.9. Removal of PB-Board



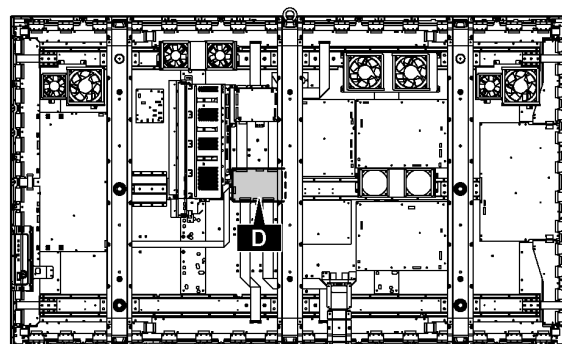
1. Disconnect the connectors (PB30, PB31, PB56, PB59, PB61, PB62, PB64, PB66, PB69, PB71).

2. Remove 4 screws and then remove PB-Board.

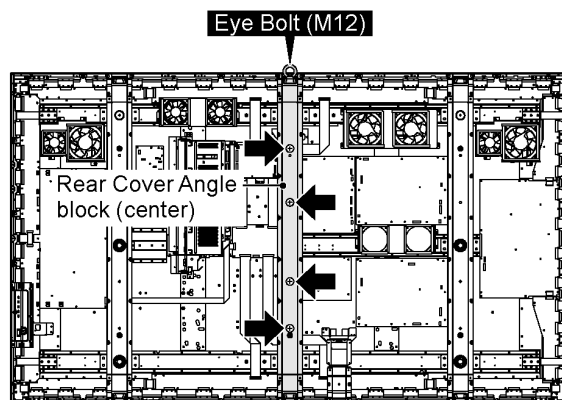


9.10. Removal of D-Board

Check that no bright points appears by Ve Life adjustment after both D and DN board exchange.

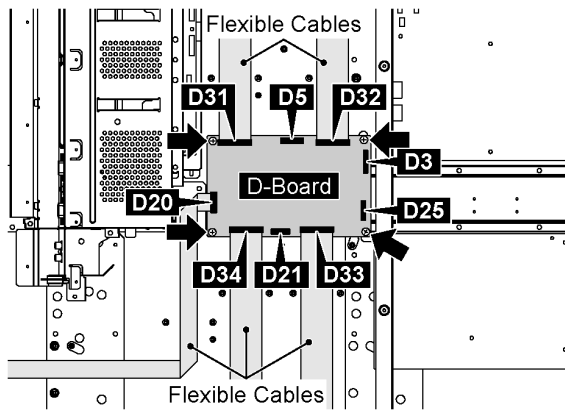


1. Remove the Eye Bolt (M12).
2. Remove 4 screws and then remove the Rear Cover Angle block (center).

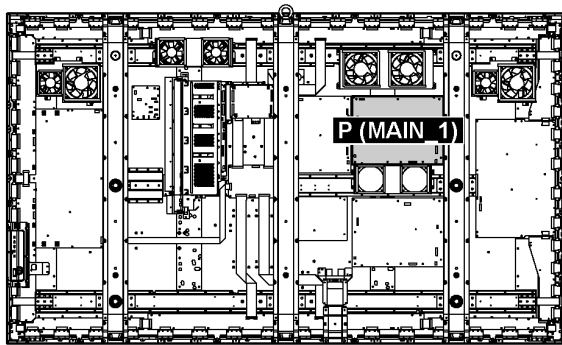


3. Disconnect the connectors (D3, D5, D21, D25).
4. Remove the flexible cables from the connectors (D20, D31, D32, D33, D34).

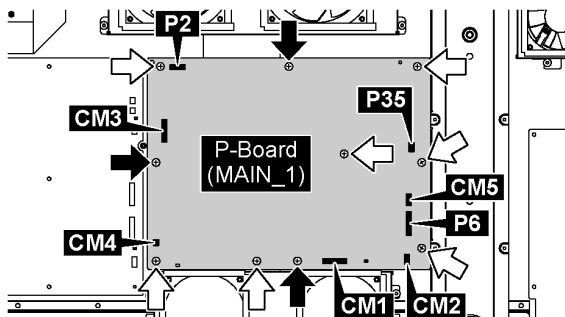
5. Remove 4 screws and then remove D-Board.



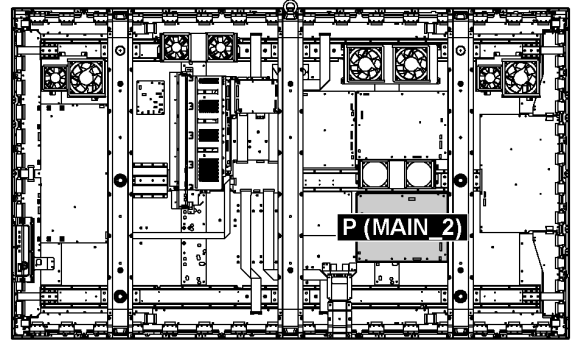
9.11. Removal of P-Board (MAIN_1)



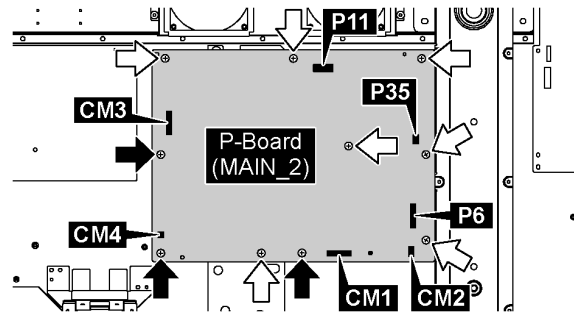
1. Disconnect the connectors (CM1, CM2, CM3, CM4, CM5, P2, P6, P35).
2. Remove 3 screws (⬆) and then remove P-Board protect spacers.
3. Remove 7 screws (⬆) and then remove P-Board (MAIN_1).



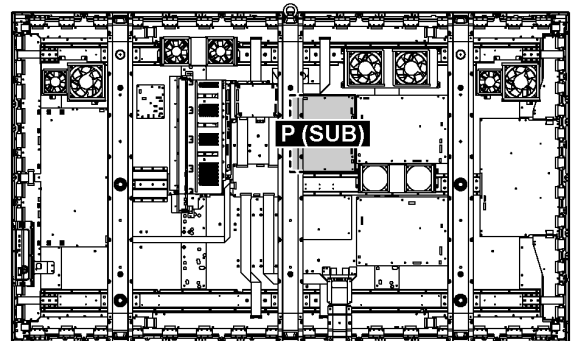
9.12. Removal of P-Board (MAIN_2)



1. Disconnect the connectors (CM1, CM2, CM3, CM4, P6, P11, P35).
2. Remove 3 screws (⬆) and then remove P-Board protect spacers.
3. Remove 7 screws (⬆) and then remove P-Board (MAIN_2).

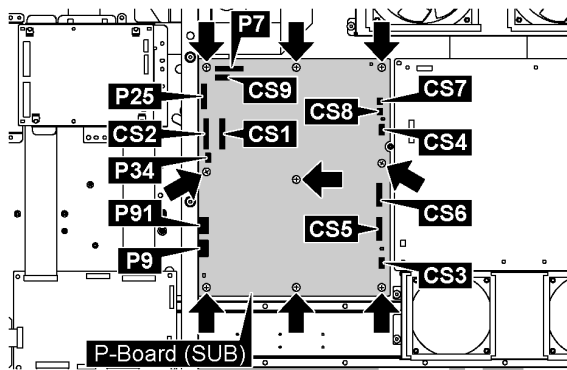


9.13. Removal of P-Board (SUB)

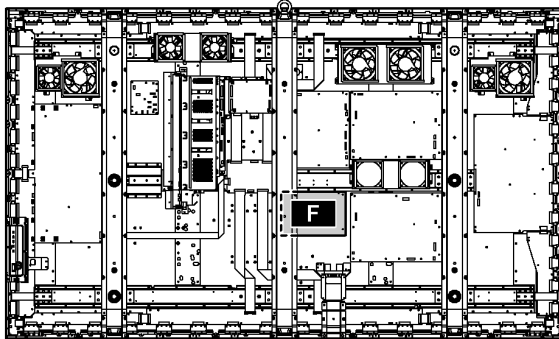


1. Remove the Rear Cover Angle block (center).
(Refer to Removal of D-board)
2. Disconnect the connectors (CS1, CS2, CS3, CS4, CS5, CS6, CS7, CS8, CS9, P7, P9, P25, P34, P91).

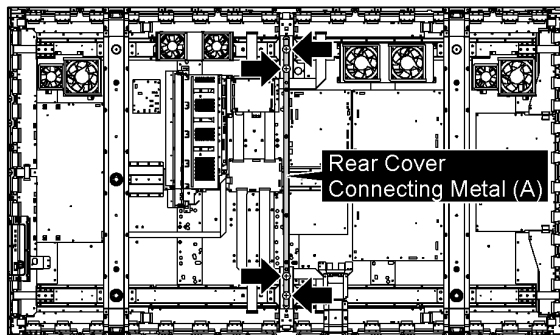
3. Remove 9 screws and then remove P-Board (SUB).



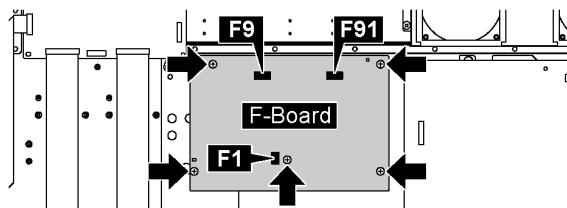
9.14. Removal of F-Board



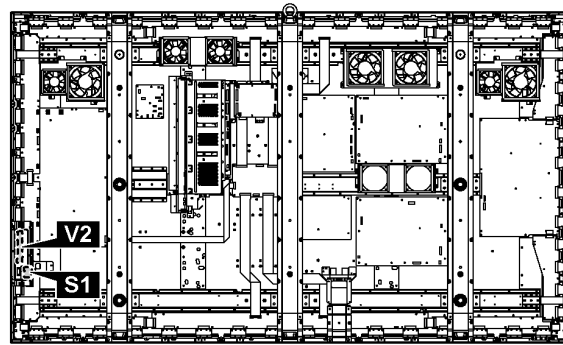
1. Remove the Rear Cover Angle block (center).
(Refer to Removal of D-board)
2. Remove 4 screws and then remove Rear Cover Connecting Metal (A).



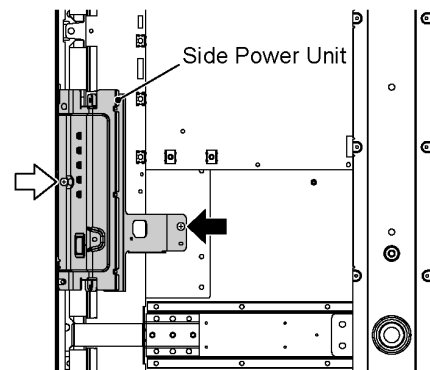
3. Disconnect the connectors (F1, F9, F91).
4. Remove 5 screws and then remove F-Board.



9.15. Removal of S1-Board and V2-Board

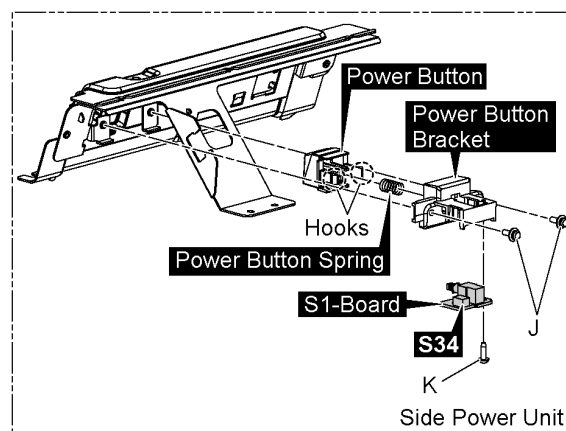


1. Remove 1 screw (↑).
2. Remove 1 screw (⇅) and then remove the Side Power Unit.



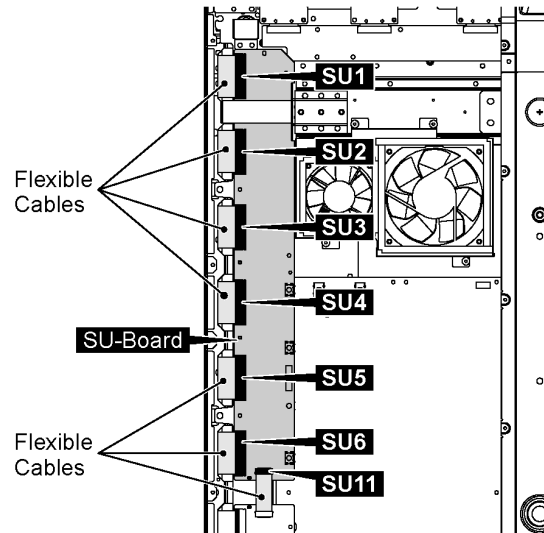
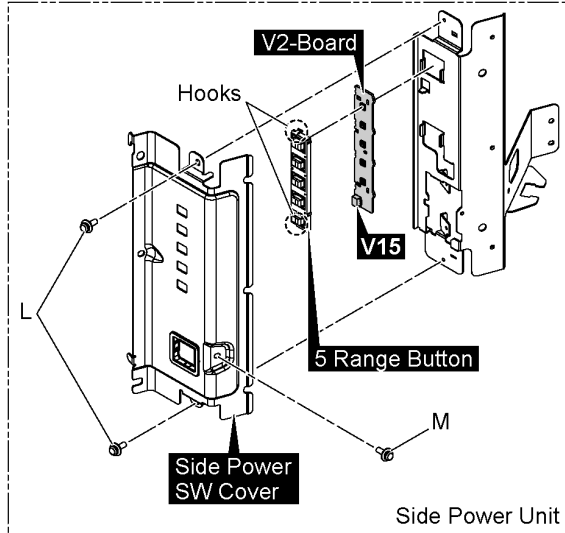
9.15.1. Removal of S1-Board

1. Remove 2 screws (J) and then remove the Power Button Bracket.
2. Remove 1 screw (K).
3. Disconnect the connector (S34) and then remove S1-Board.
4. Remove 2 hooks and then remove the Power Button and Power Button Spring.

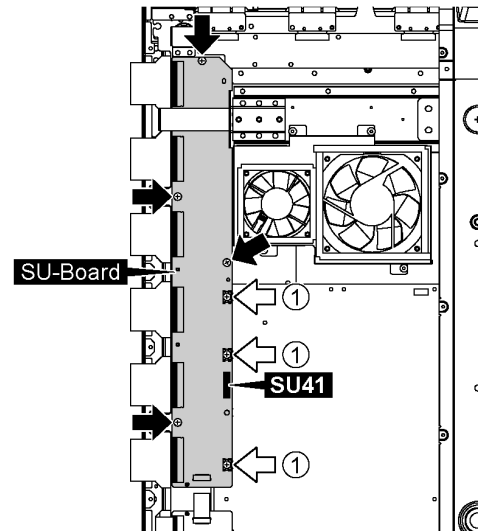


9.15.2. Removal of V2-Board

1. Remove 2 screws (L).
2. Remove 1 screw (M) and then remove the Side Power SW Cover.
3. Disconnect the connector (V15) and then remove V2-Board.
4. Remove 2 hooks and then remove the 5 Range Button from V2-Board.



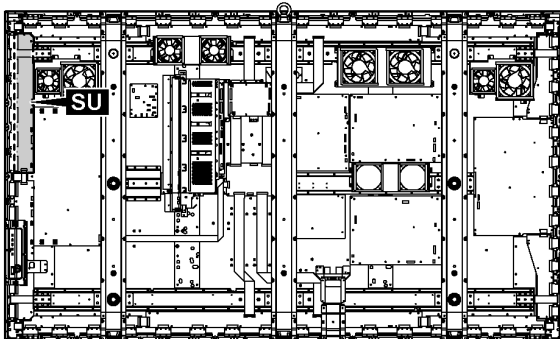
2. Disconnect the connector (SU41).
3. Remove 4 screws (↑).
4. Remove 3 screws (⇅) and then remove SU-Board.



Note: when fixing SU-Board

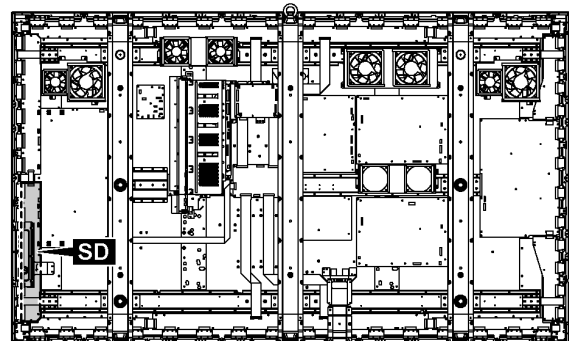
- Screw on 3 screws (⇅) firstly.

9.16. Removal of SU-Board



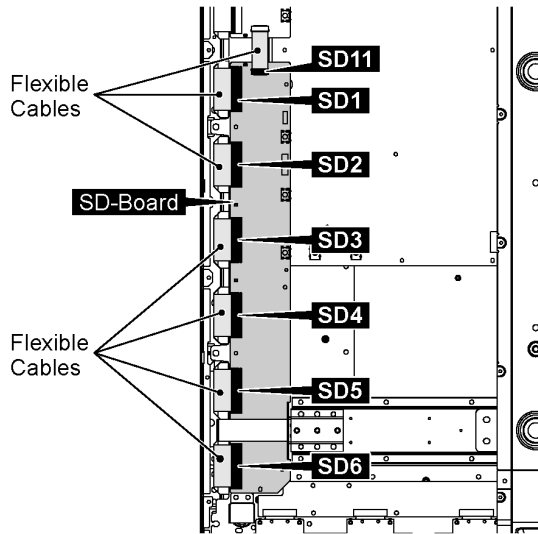
1. Remove the flexible cables from the connectors (SU1, SU2, SU3, SU4, SU5, SU6, SU11).

9.17. Removal of SD-Board

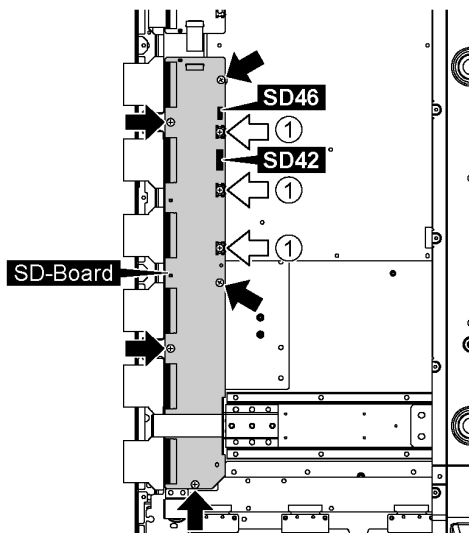


1. Remove the Side Power Unit.
(Refer to Removal of S1-Board and V2-Board)

2. Remove the flexible cables from the connectors (SD1, SD2, SD3, SD4, SD5, SD6, SD11).



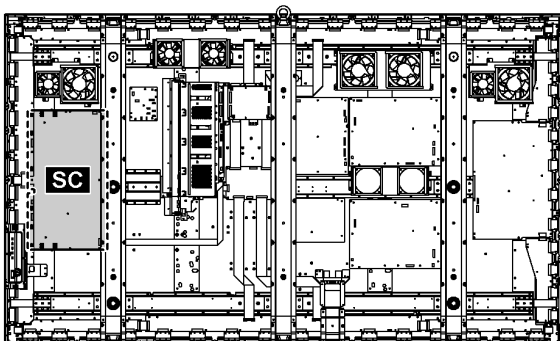
3. Disconnect the connectors (SD42, SD46).
4. Remove 5 screws (▲).
5. Remove 3 screws (⬆) and then remove SD-Board.



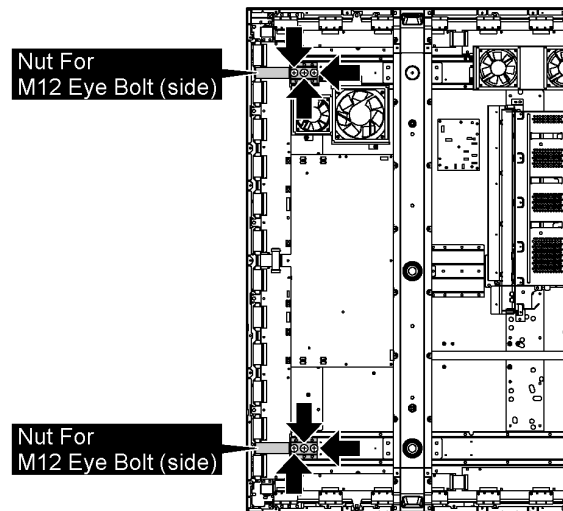
Note: when fixing SD-Board

- Screw on 3 screws (⬆) firstly.

9.18. Removal of SC-Board



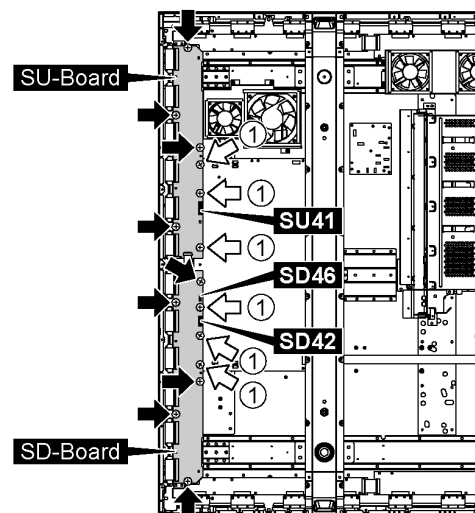
1. Remove the Side Power Unit.
(Refer to Removal of S1-Board and V2-Board)
2. Remove 6 screws and then remove Nuts For M12 Eye Bolt (side).



3. Disconnect the connectors (SU41, SD42, SD46).
4. Remove 9 screws (▲).
5. Remove 6 screws (⬆) and then turn over SU-Board and SD-Board to the left.

Note:

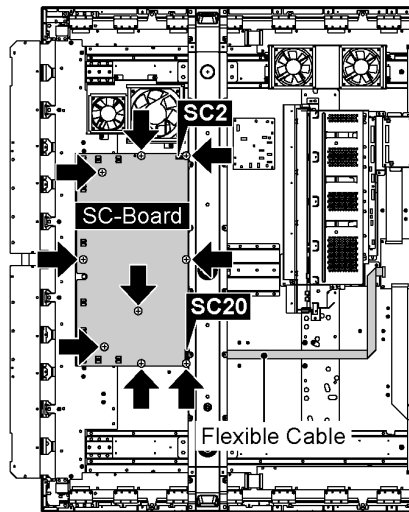
Do not damage the Flexible Cables of SU-Board and SD-Board, and the parts on SC-Board.



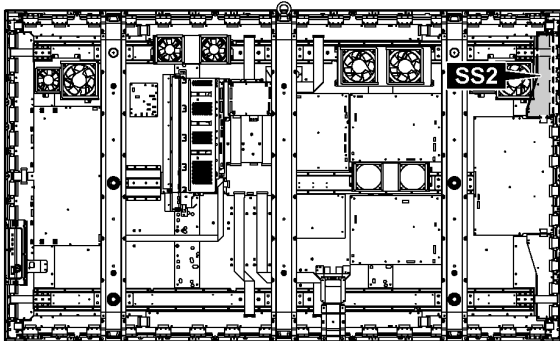
Note: when fixing SU-Board and SD-Board

- Screw on 6 screws (⬆) firstly.

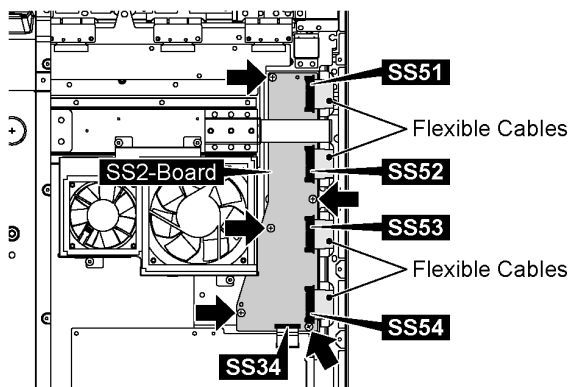
6. Disconnect the connector (SC2).
7. Remove the flexible cable from the connector (SC20).
8. Remove 9 screws and then remove SC-Board.



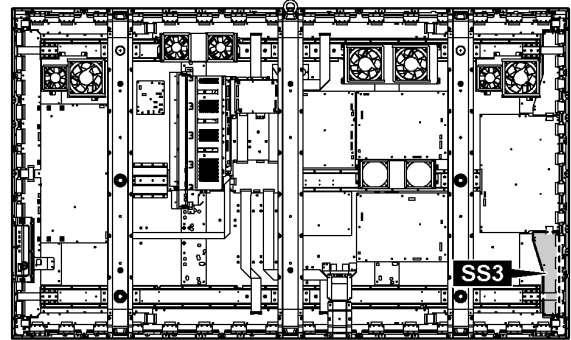
9.19. Removal of SS2-Board



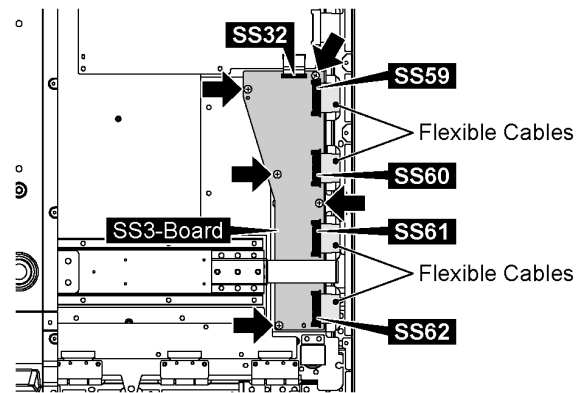
1. Disconnect the connector (SS34).
2. Remove the flexible cables from the connectors (SS51, SS52, SS53, SS54).
3. Remove 5 screws and then remove SS2-Board.



9.20. Removal of SS3-Board

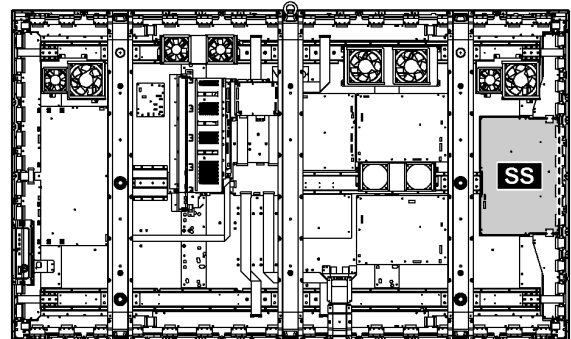


1. Disconnect the connector (SS32).
2. Remove the flexible cables from the connectors (SS59, SS60, SS61, SS62).
3. Remove 5 screws and then remove SS3-Board.



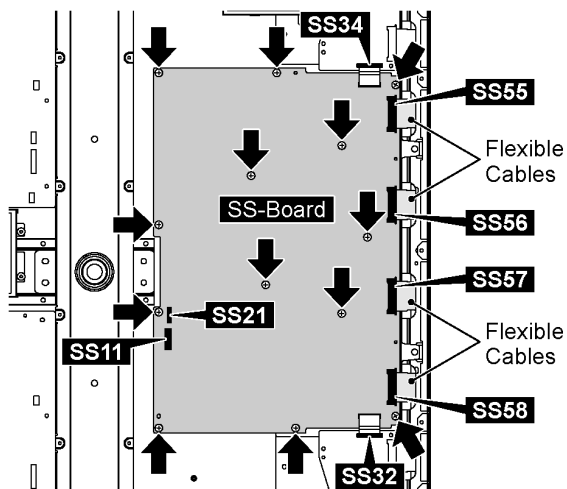
9.21. Removal of SS-Board

Ve adjustment is performed by IIC mode after SS board exchange.

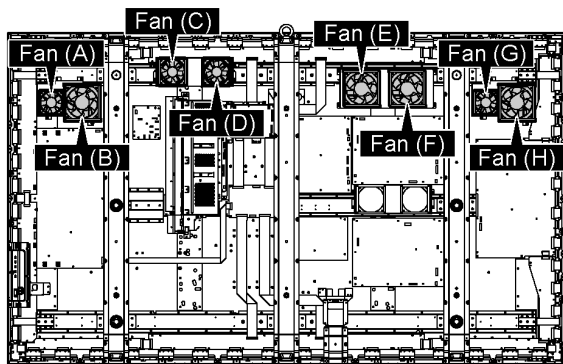


1. Disconnect the connectors (SS11, SS21, SS32, SS34).
2. Remove the flexible cables from the connectors (SS55, SS56, SS57, SS58).

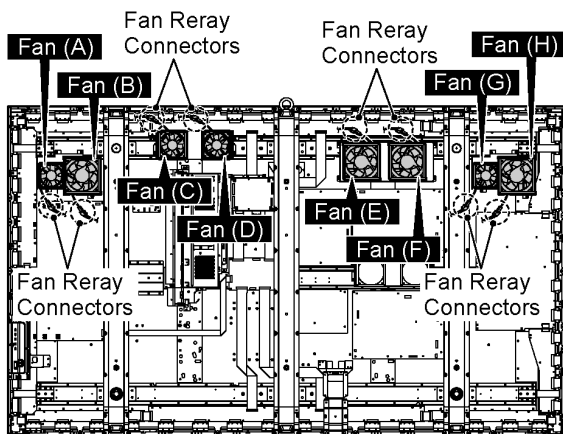
3. Remove 13 screws and then remove SS-Board.



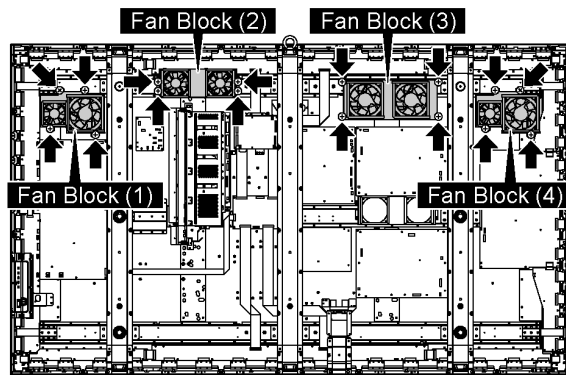
9.22. Removal of Fan



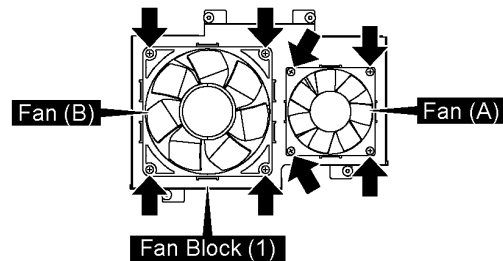
1. Disconnect the Fan Relay Connectors.



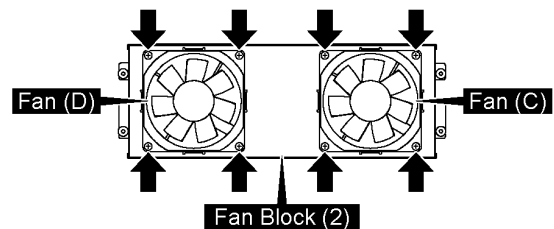
2. Remove 16 screws and then remove the Fan Blocks (1, 2, 3, 4).



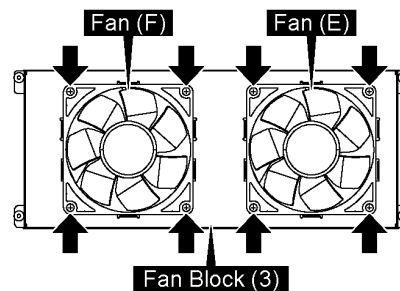
3. Remove 8 screws and then remove the Fan (A, B).



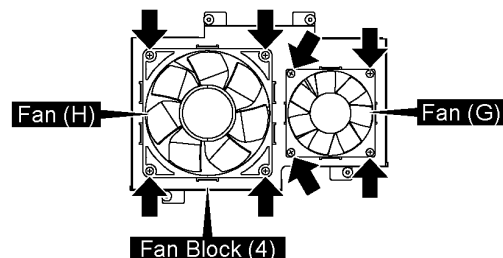
4. Remove 8 screws and then remove the Fan (C, D).



5. Remove 8 screws and then remove the Fans (E, F).

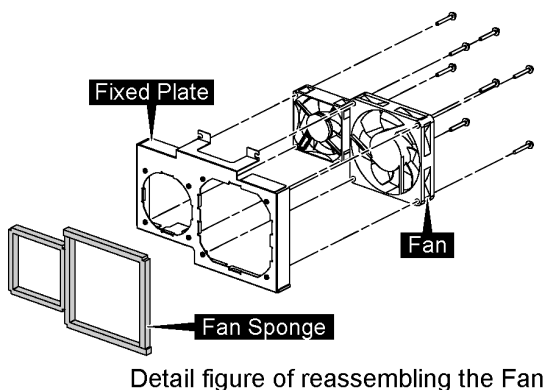


6. Remove 8 screws and then remove the Fan (G, H).



7. Reassemble the Fans in reverse order.

8. Stick the Fan Sponge around the Fan.

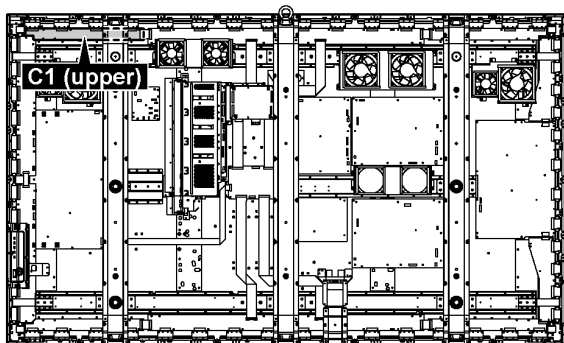


Note:

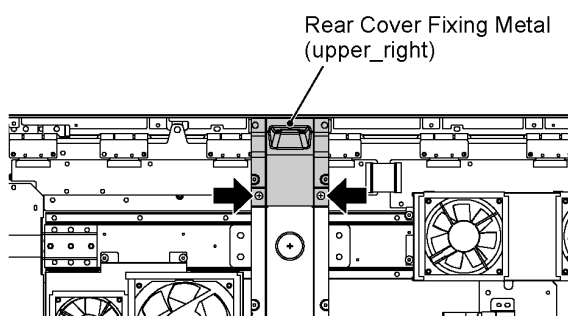
The Fan Sponge is not re-usable.

Please use a new one when Fan exchange.

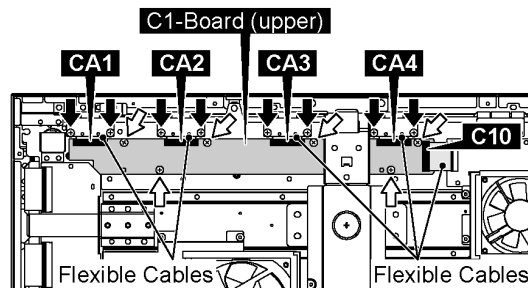
9.23. Removal of C1-Board (upper)



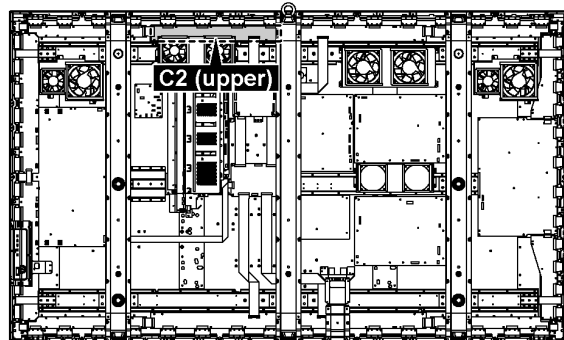
1. Remove 2 screws and then remove the Rear Cover Fixing Metal (upper_right).



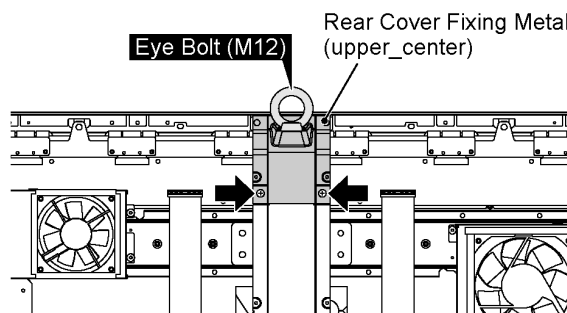
2. Remove the flexible cable from the connector (C10).
3. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA1, CA2, CA3, CA4).
4. Remove 6 screws (⬆) and then remove C1-Board (upper).



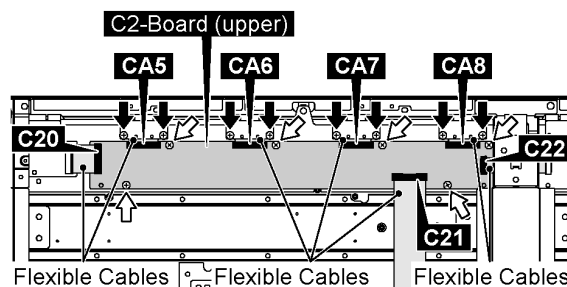
9.24. Removal of C2-Board (upper)



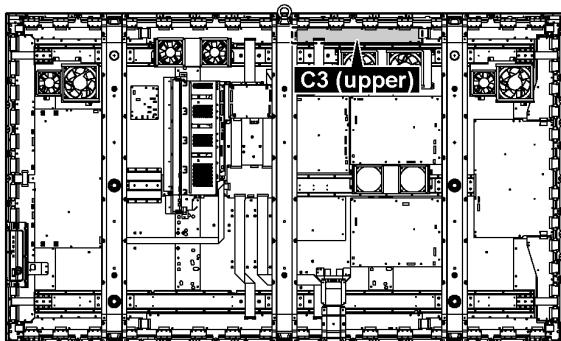
1. Remove the Eye Bolt (M12).
2. Remove 2 screws and then remove the Rear Cover Fixing Metal (upper_center).



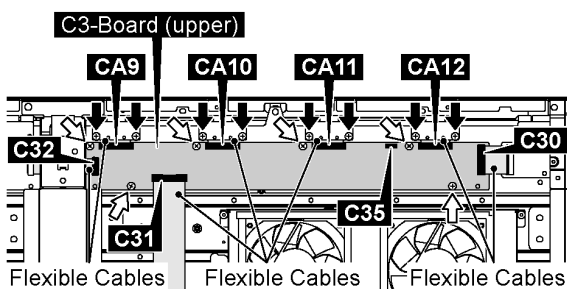
3. Remove the Fan Block (2). (Refer to Removal of Fan)
4. Remove the flexible cables from the connectors (C20, C21, C22).
5. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA5, CA6, CA7, CA8).
6. Remove 6 screws (⬆) and then remove C2-Board (upper).



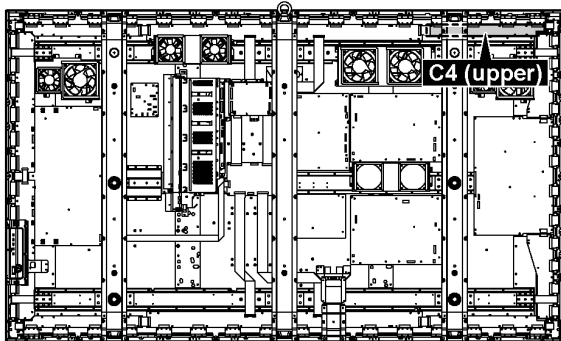
9.25. Removal of C3-Board (upper)



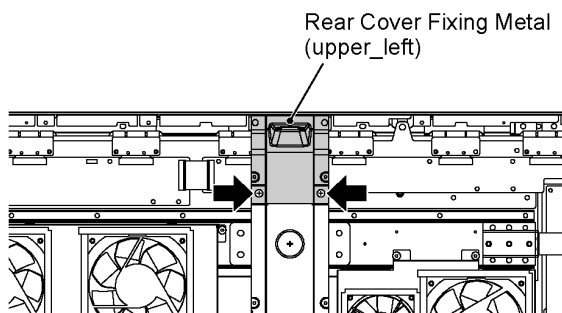
1. Remove the Rear Cover Fixing Metal (upper_center).
(Refer to Removal of C2-Board (upper))
2. Disconnect the connector (C35).
3. Remove the flexible cables from the connectors (C30, C31, C32).
4. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA9, CA10, CA11, CA12).
5. Remove 6 screws (⬆) and then remove C3-Board (upper).



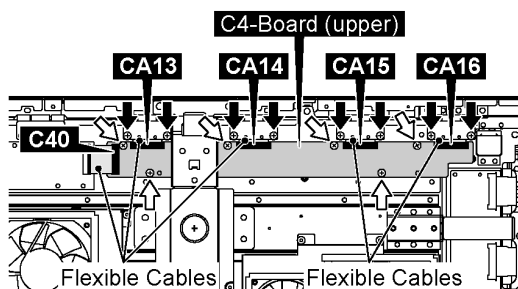
9.26. Removal of C4-Board (upper)



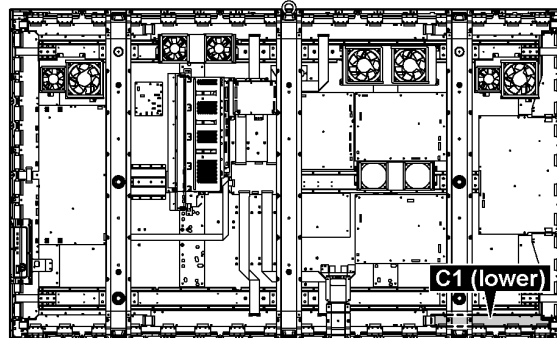
1. Remove 2 screws and then remove the Rear Cover Fixing Metal (upper_left).



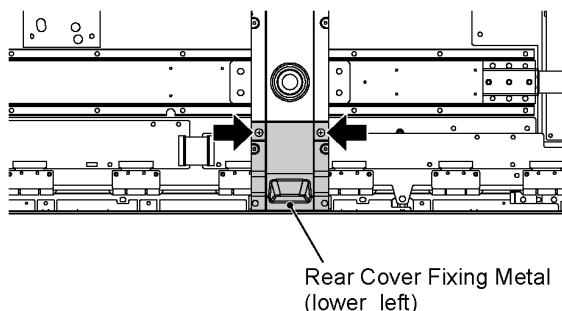
2. Remove the flexible cable from the connector (C40).
3. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA13, CA14, CA15, CA16).
4. Remove 6 screws (⬆) and then remove C4-Board (upper).



9.27. Removal of C1-Board (lower)

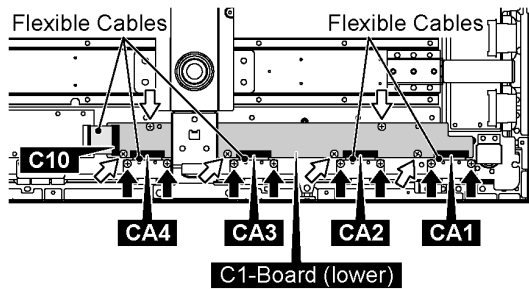


1. Remove 2 screws and then remove the Rear Cover Fixing Metal (lower_left).

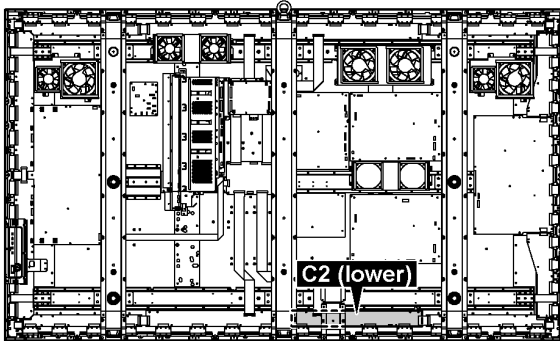


2. Remove the flexible cable from the connector (C10).
3. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA1, CA2, CA3, CA4).

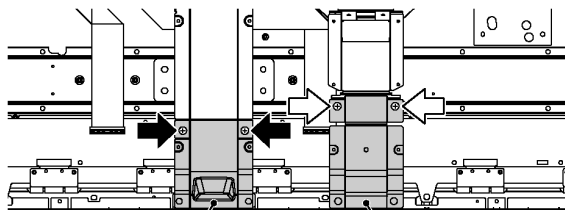
4. Remove 6 screws (⬆) and then remove C1-Board (lower).



9.28. Removal of C2-Board (lower)

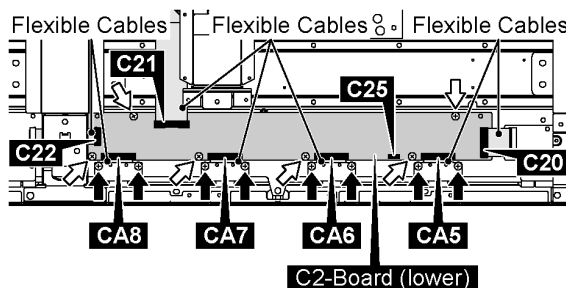


1. Remove 2 screws (⬆) and then remove the Rear Cover Fixing Metal (lower_center).
2. Remove 2 screws (⬆) and then remove the AC Cord Cover Holder.

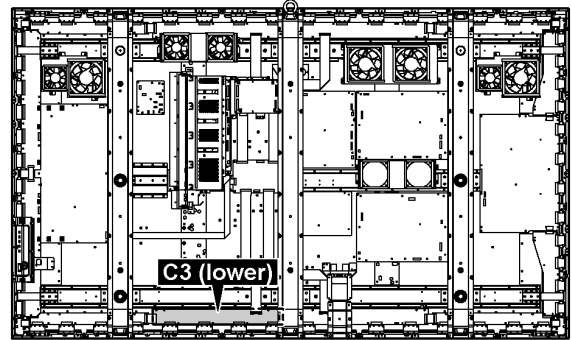


Rear Cover Fixing Metal (lower_center) AC Cord Cover Holder

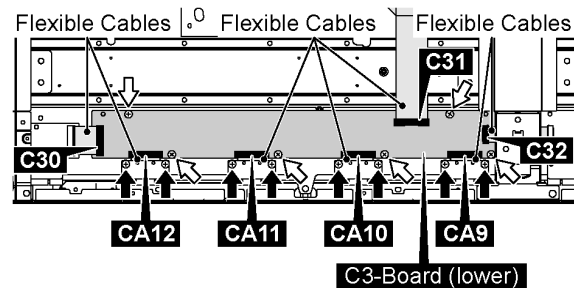
3. Disconnect the connector (C25).
4. Remove the flexible cables from the connectors (C20, C21, C22).
5. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA5, CA6, CA7, CA8).
6. Remove 6 screws (⬆) and then remove C2-Board (lower).



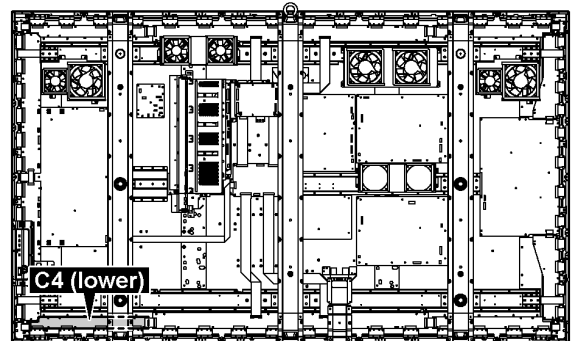
9.29. Removal of C3-Board (lower)



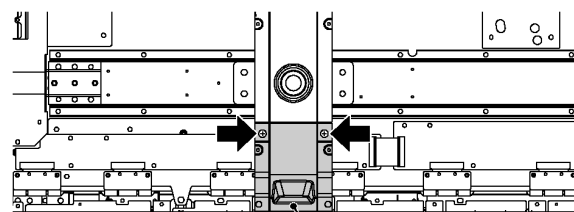
1. Remove the Rear Cover Fixing Metal (lower_center). (Refer to Removal of C2-Board (lower))
2. Remove the flexible cables from the connectors (C30, C31, C32).
3. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA9, CA10, CA11, CA12).
4. Remove 6 screws (⬆) and then remove C3-Board (lower).



9.30. Removal of C4-Board (lower)

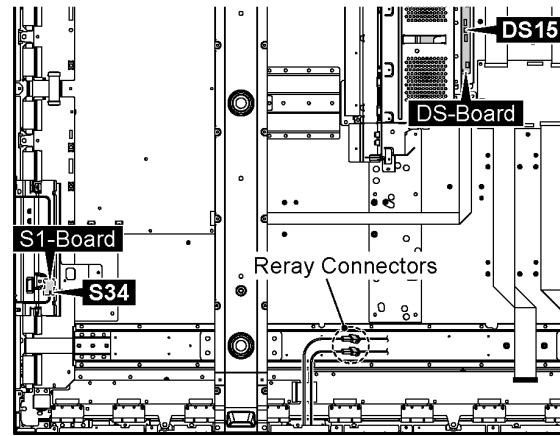
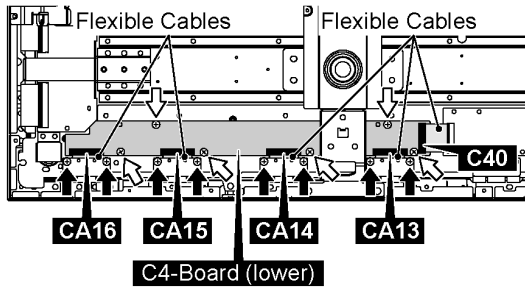


1. Remove 2 screws and then remove the Rear Cover Fixing Metal (lower_right).

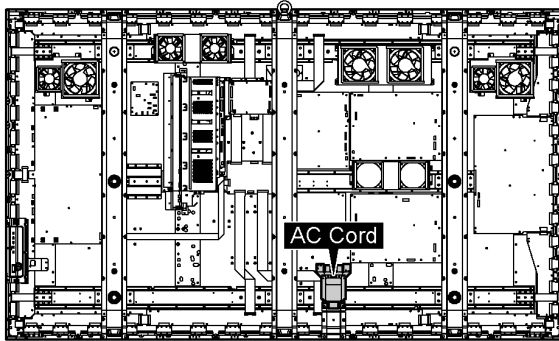


Rear Cover Fixing Metal (lower_right)

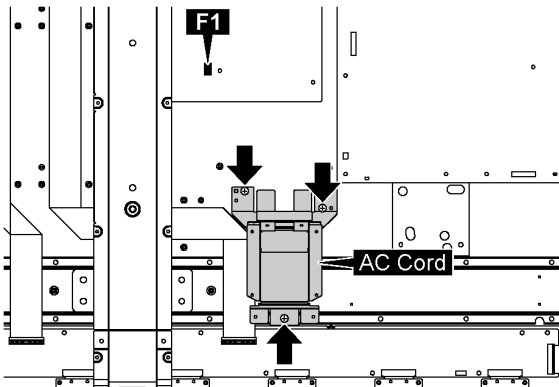
2. Remove the flexible cable from the connector (C40).
3. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA13, CA14, CA15, CA16).
4. Remove 6 screws (⬆) and then remove C4-Board (lower).



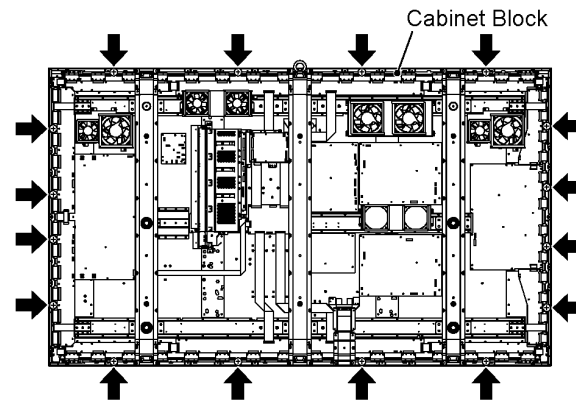
9.31. Removal of AC Cord



1. Remove the AC Cord Cover Holder.
(Refer to Removal of C2-Board (lower))
2. Disconnect the connector (F1).
3. Remove 3 screws and then remove the AC Cord.

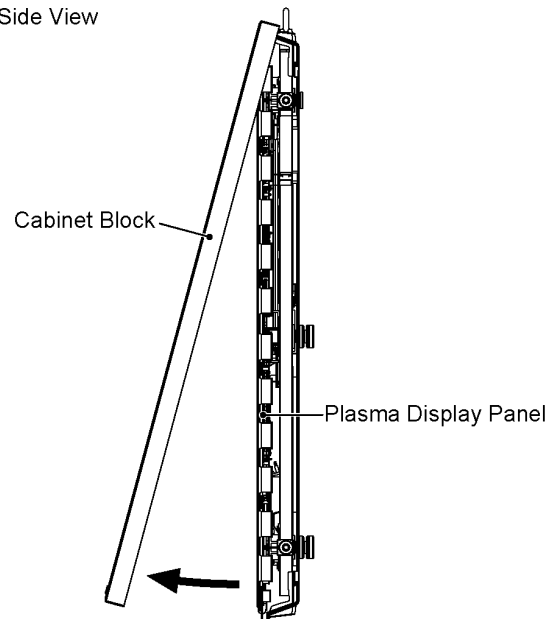


3. Remove the Side Power Unit.
(Refer to Removal of S1-Board and V2-Board)
4. Remove 16 screws and then remove Cabinet Block.



5. Pull the bottom of the Cabinet Block forward and lift.
6. Remove the Cabinet Block.

Side View

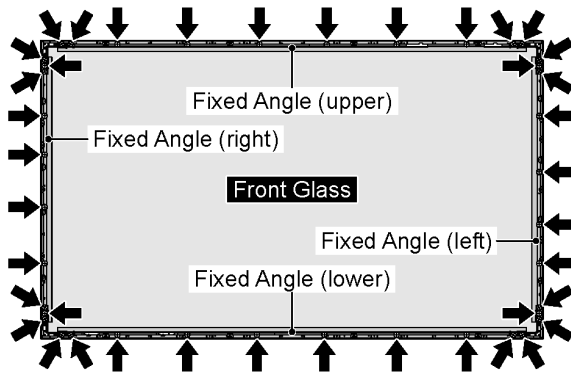


9.32. Removal of Front Glass, V1, V3-Board and Cabinet Assy

1. Disconnect the connectors (DS15, S34).
2. Disconnect 2 Relay Connectors.

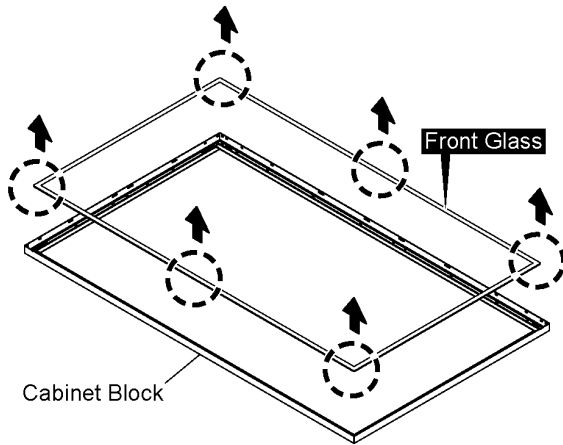
9.32.1. Removal of Front Glass

1. Remove 40 screws and then remove the Fixed Angles (left, right, top, bottom).
2. Remove the Front Glass.



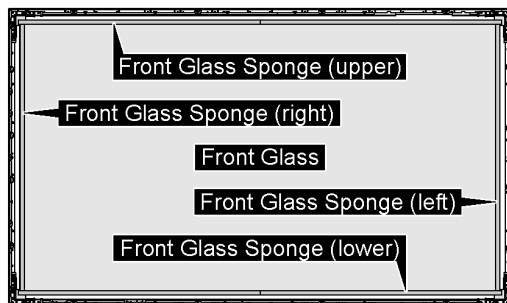
(Note)

- When removing the Front Glass from Cabinet, there is a risk of the glass center bending damage.
- Be sure to lift the instruction six positions of the figure, when remove the Front Glass.



Note: when Front Glass is exchanged

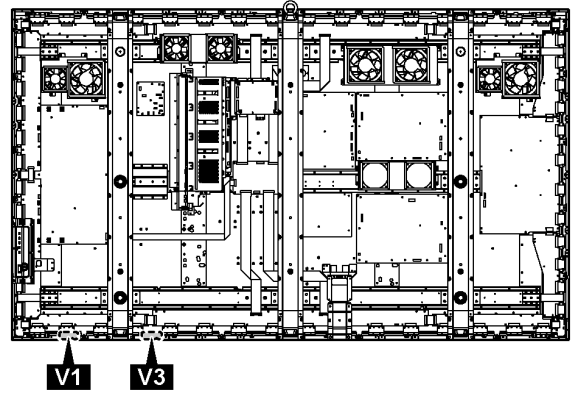
- Paste the Sponges in order along each Fixed Angles (top, bottom, left, right).



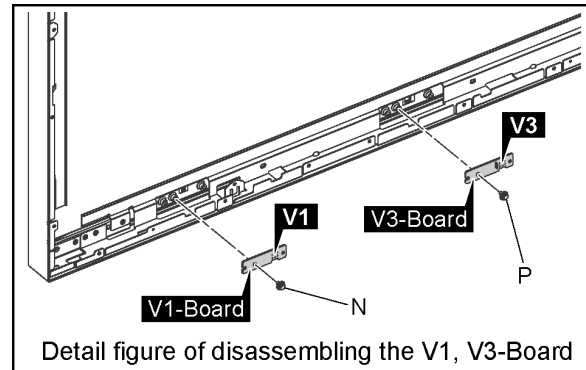
Note

- The sponges are parts which cannot be recycled. Please use the new article when you exchange the Front Glass.

9.32.2. Removal of V1-Board and V3-Board

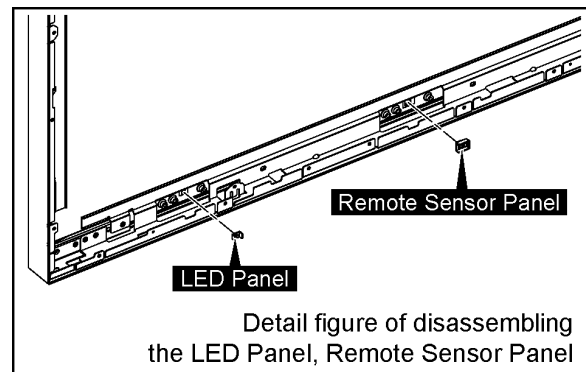


1. Remove 1 screw (N).
2. Disconnect the connector (V1) and then remove V1-Board.
3. Remove 1 screw (P).
4. Disconnect the connector (V3) and then remove V3-Board.

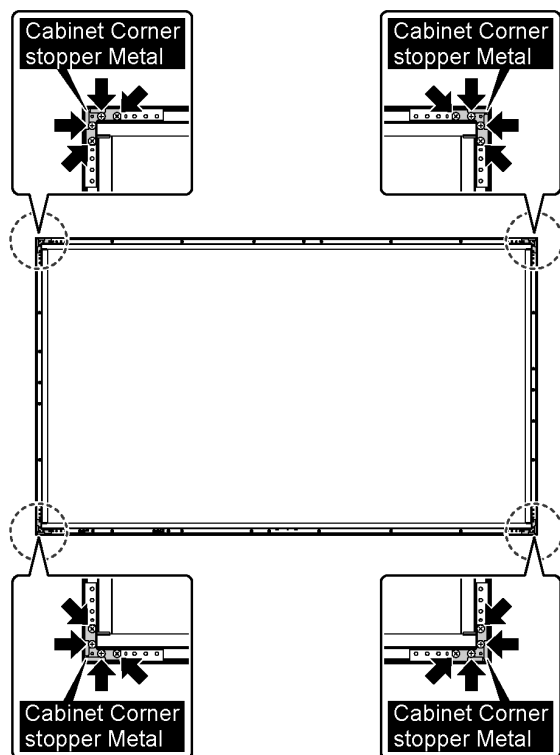


9.32.3. Removal of Cabinet Assy

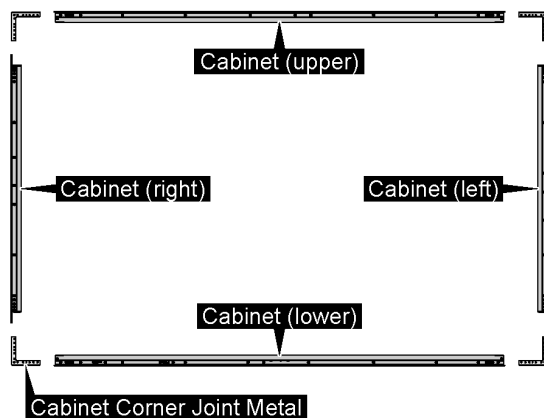
1. Remove the Front Glass.
(Refer to Removal of Front Glass)
2. Remove V1-Board and V3-Board.
(Refer to Removal of V1-Board and V3-Board)
3. Remove the LED Panel and Remote Sensor Panel.



4. Remove 16 screws and then remove the Cabinet Corner stopper Metals.

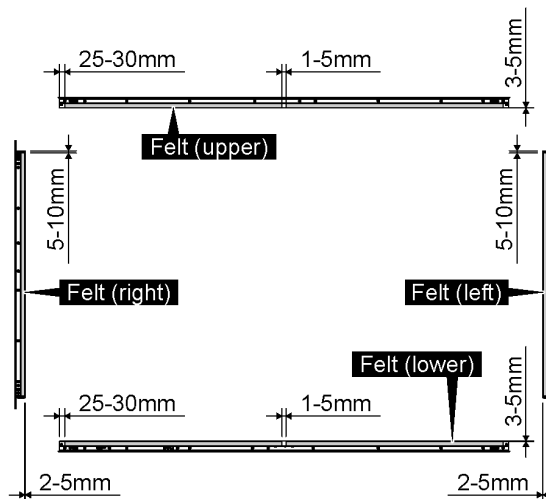


5. Remove the Cabinet Corner Joint Metals and Cabinet (left, right, upper, lower)



Note: when Cabinet is exchanged

- Paste the felts in order along each Fixed Angles (left, right, upper, lower).
- Make sure the felts do not protrude from the edge of the cabinet.



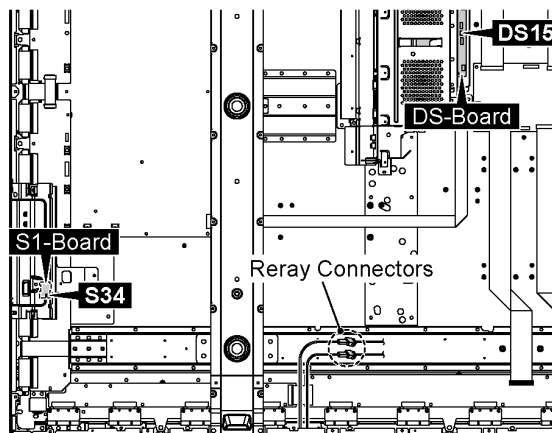
Note

- The felts are parts which cannot be recycled. Please use the new article when you exchange the Cabinet.

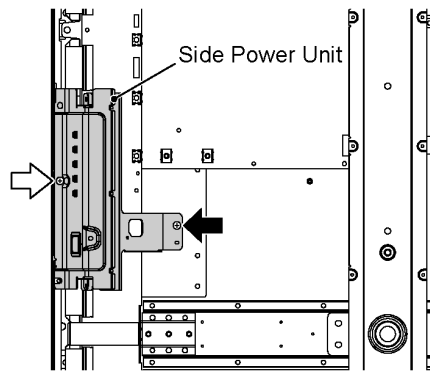
9.33. Removal of Plasma Display Panel

The C1 (upper, lower), C2 (upper, lower), C3 (upper, lower), C4 (upper, lower), SS, SS2, SS3, SC, SU, SD Boards and, flexible cables between D-C Boards and D-SC Boards, are connected with the Plasma Display Panel for the repair.

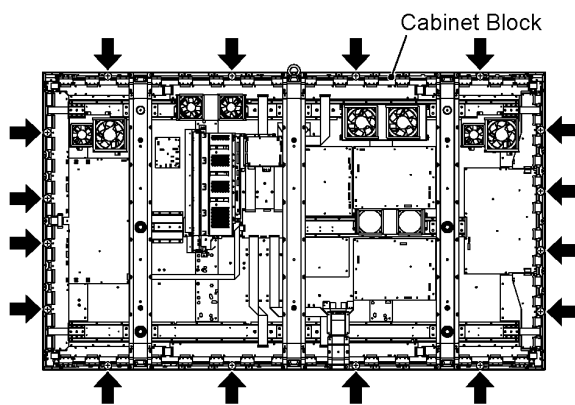
1. Remove the Rear Covers.
(Refer to Removal of Rear Cover)
2. Disconnect the connectors (DS15, S34).
3. Disconnect 2 Relay Connectors.



4. Remove 1 screw (⬆).
5. Remove 1 screw (⬆) and then remove the Side Power Unit.

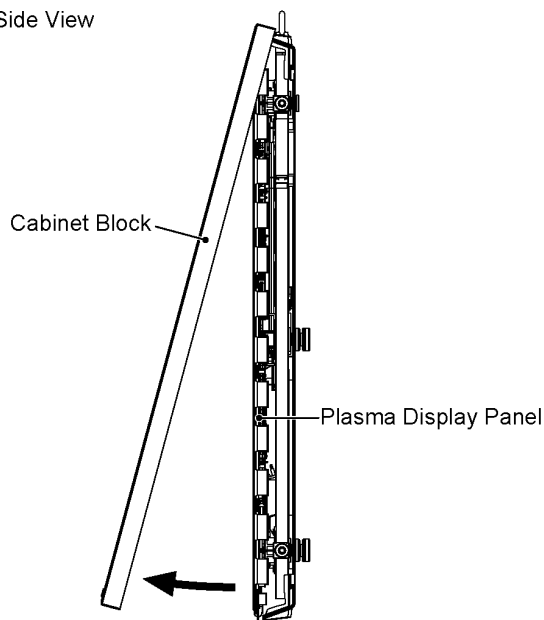


6. Remove 16 screws and then remove Cabinet Block.

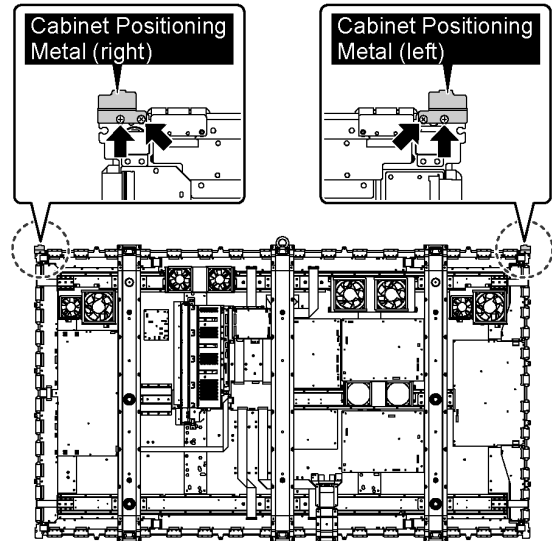


7. Pull the bottom of the Cabinet Block forward and lift.
8. Remove the Cabinet Block.

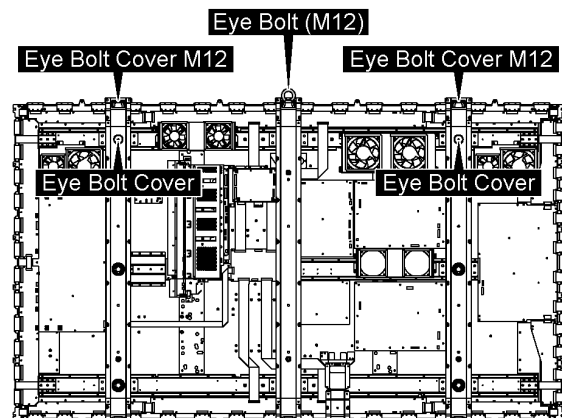
Side View



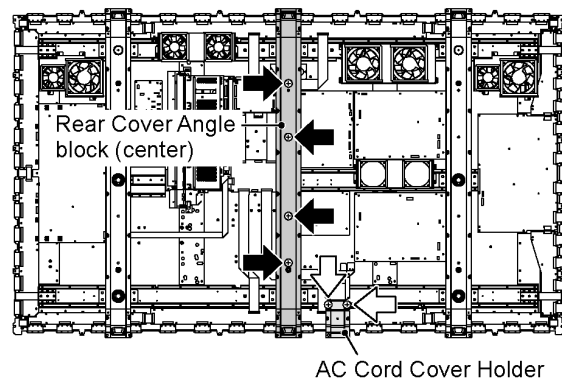
9. Remove 4 screws and then remove the Cabinet Positioning Metals (left, right).



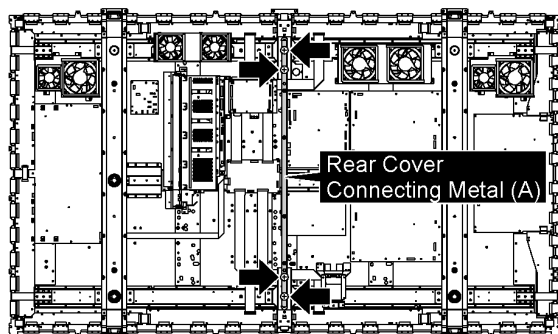
10. Remove 1 Eye Bolt (M12).
11. Remove 2 Eye Bolt Covers M12.
12. Remove 2 Eye Bolt Covers.



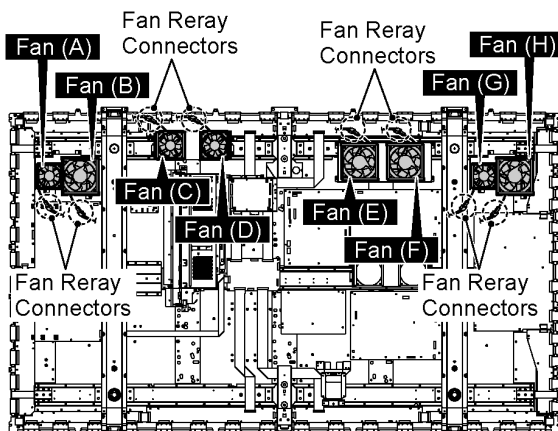
13. Remove 4 screws (⬆) and then remove the Rear cover Angle Block (center).
14. Remove 2 screws (⬆) and then remove the AC Cord Cover Holder.



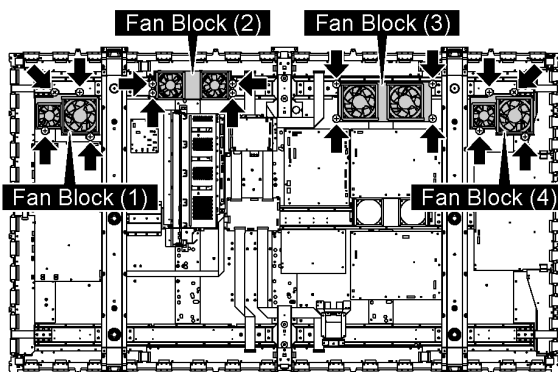
15. Remove 4 screws and then remove Rear Cover Connecting Metal (A).



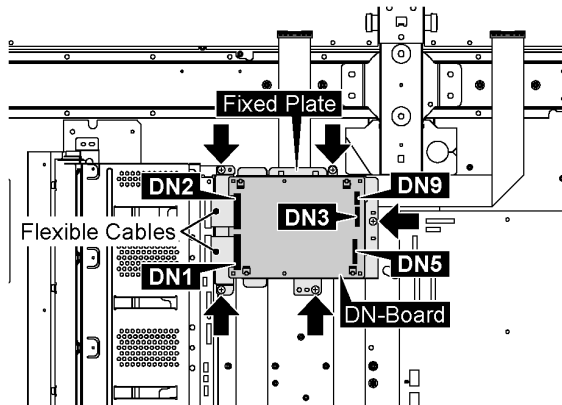
16. Disconnect the Fan Relay Connectors.



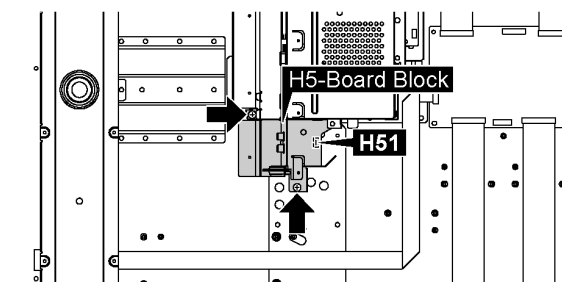
17. Remove 16 screws and then remove the Fan Blocks (1, 2, 3, 4).



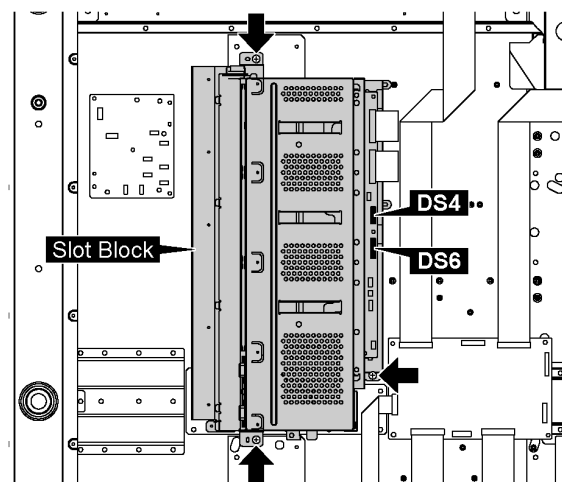
18. Disconnect the connectors (DN3, DN5, DN9).
 19. Remove the flexible cables from the connectors (DN1, DN2).
 20. Remove 5 screws and then remove the DN-Board and Fixed Plate.



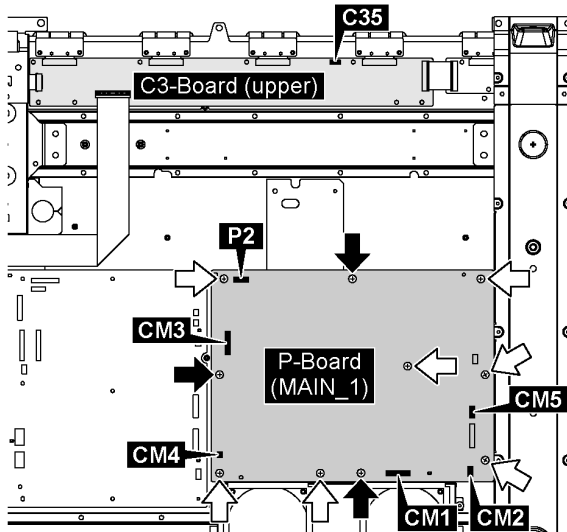
21. Disconnect the connector (H51).
 22. Remove 2 screws and then remove H5-Board Block.



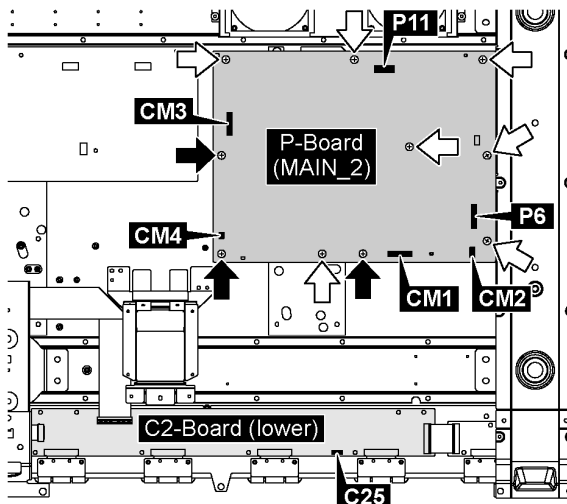
23. Disconnect the connectors (DS4, DS6).
 24. Remove 3 screws and then remove the Slot Block.



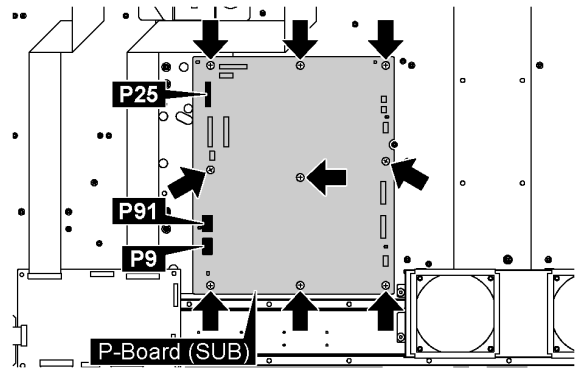
25. Disconnect the connectors of P-Board (Main_1) (CM1, CM2, CM3, CM4, CM5, P2).
26. Disconnect the connector of C3-Board (upper) (C35).
27. Remove 3 screws (▲) and then remove P-Board protect spacers.
28. Remove 7 screws (⬆) and then remove P-Board (MAIN_1).



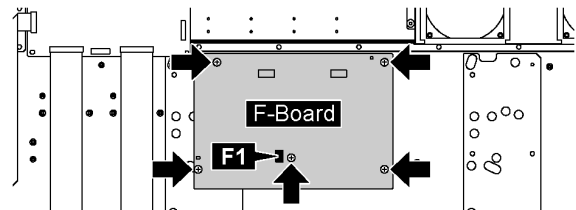
29. Disconnect the connectors of P-Board (Main_2) (CM1, CM2, CM3, CM4, P6, P11).
30. Disconnect the connector of C2-Board (lower) (C25).
31. Remove 3 screws (▲) and then remove P-Board protect spacers.
32. Remove 7 screws (⬆) and then remove P-Board (MAIN_2).



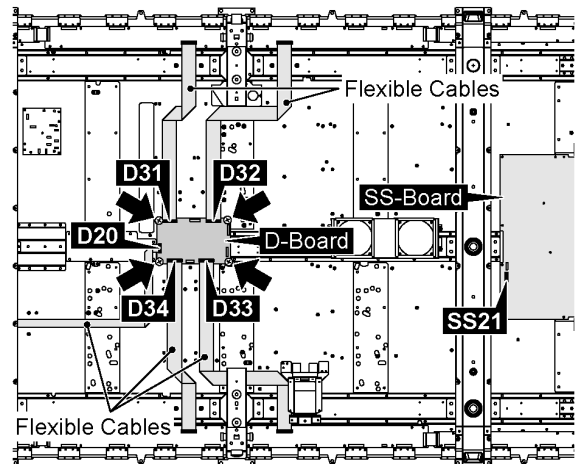
33. Disconnect the connectors (P9, P25, P91).
34. Remove 9 screws and then remove P-Board (SUB).



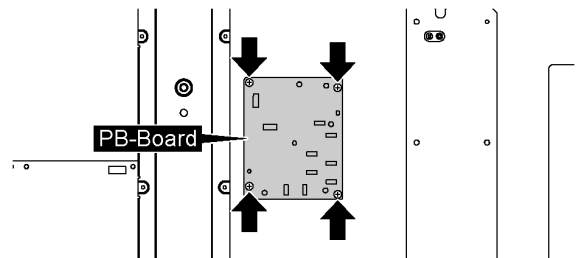
35. Disconnect the connector (F1).
36. Remove 5 screws and then remove F-Board.



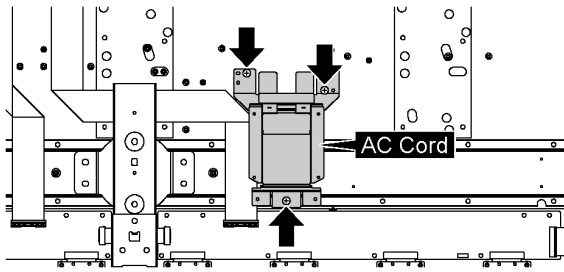
37. Disconnect the connector (SS21).
38. Remove the flexible cables from the connectors (D31, D32, D33, D34, SC20).
39. Remove 4 screws and then remove D-Board.



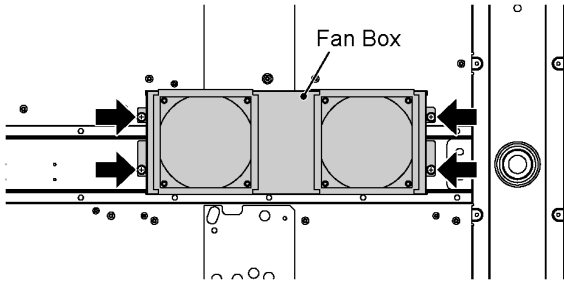
40. Remove 4 screws and then remove PB-Board.



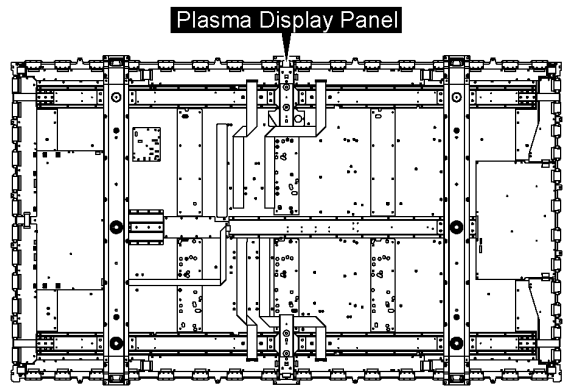
41. Remove 3 screws and then remove the AC Cord.



42. Remove 4 screws and then remove the Fan Box.



43. Exchange the Plasma Display Panel.



10 Measurements and Adjustments

10.1. Adjustment Procedure

10.1.1. Driver Set-up

10.1.1.1. Item / Preparation

- Set Aging pattern (white pattern signal) by IIC mode.
- Set the picture controls as follows.
Picture menu: Standard
Picture: +25
Aspect: Full

Caution

- First perform Vsus adjustment.
- Confirmation of Vscn voltage should be performed after confirmation of Vad adjustment.
When Vad=-135V, Voltage of Vscn is +10V \pm 4V.

10.1.1.2. Adjustments

Adjust driver section voltages. (Refer to the panel data on the Panel Label).

Check or adjust the following voltages with the multimeter.

Name	Test Point	Voltage	Volume	Remarks
Vsus (SC side)	TPVSUS (SC)	Vsus \pm 2V	VR251 (P_Main_1)	*
Vsus (SS side)	TPVSUS (SS)	Vsus \pm 2V	VR251 (P_Main_2)	*
Ve**	TPVE (SS)	Ve \pm 1V	VR16001 (SS)	*
Vda	TP9 (P_Main_1)	70V +1V, -2V	Fixed	
	TP9 (P_Main_2)	70V +1V, -2V	Fixed	
Vad	TPVAD (SC)	-135V \pm 1V	VR16600 (SC)	
Vscn	TPVSCN (SC)	Vad_base: +145V \pm 4V GND_base: +10V \pm 6V	Fixed	

*See the Panel Label.

**See chap. 10.1.6.

Panel Label information

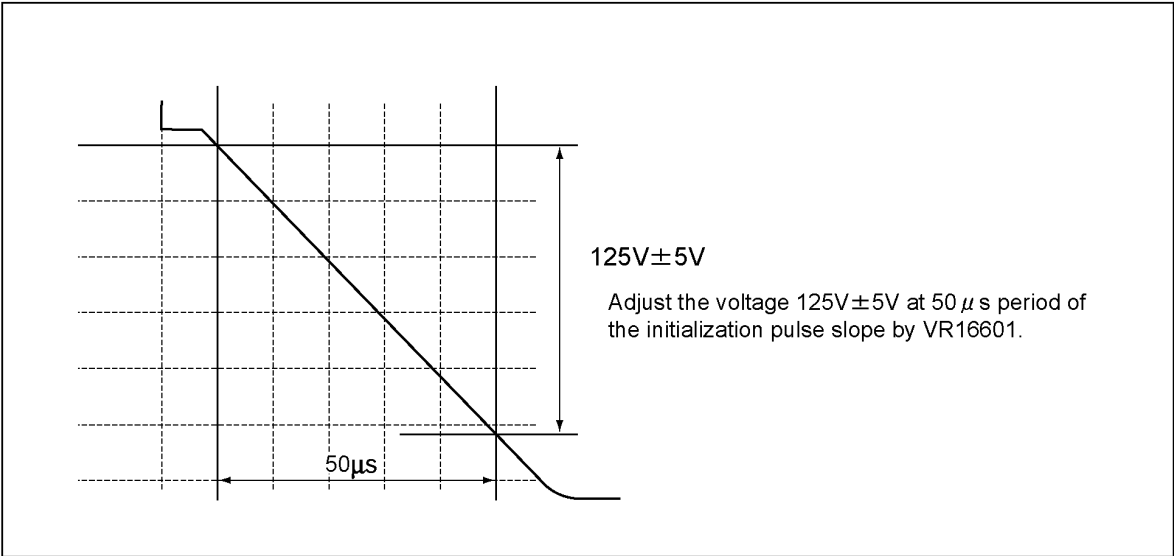
Panasonic	
MC <input type="text"/>	<input type="text"/> 2009
Serial No. <input type="text"/>	
Ve : <input type="text"/> V , Vsus : <input type="text"/> V	← Adjustment voltage
MADE IN JAPAN	TQF <input type="text"/>

10.1.2. Initialization Pulse Adjust

- 1. Set Aging pattern (white pattern signal) by IIC mode.
- 2. Set the picture controls as follows.
Picture menu: Standard
Picture: +25
Aspect: Full
- 3. Connect Oscilloscope to TPSC1 and adjust VR16601 for $125V \pm 5V$.

Test Point	Volume	Level
TPSC1 (SC)	VR16601 (SC)	$125V \pm 5V$ at $50 \mu s$ period on the down slope.

TPSC1



10.1.3. P.C.B. (Print Circuit Board) and Plasma Display Panel exchange

10.1.3.1. Quick adjustment after P.C.B. and Panel exchange

1. To remove P.C.B., wait 10 minute after power was off for discharge from electrolysis capacitors.

10.1.3.2. Quick adjustment after P.C.B. exchange

Adjust the following voltages with the multimeter.

P.C.B.	Name	Test Point	Voltage	Volume	Remarks
P Board (Main_1)	Vsus	TPVSUS (SC)	Vsus \pm 2V	VR251 (P_Main_1)	*
	Vda	TP9 (P_Main_1)	70V +1V, -2V	Fixed	
P Board (Main_2)	Vsus	TPVSUS (SS)	Vsus \pm 2V	VR251 (P_Main_2)	*
	Vda	TP9 (P_Main_2)	70V +1V, -2V	Fixed	
SC Board	Vad	TPVAD (SC)	-135V \pm 1V	VR16600 (SC)	
	Vscn	TPVSCN (SC)	Vad_base: +145V \pm 4V GND_base: +10V \pm 6V	Fixed	
SS Board	Ve**	TPVE (SS)	Ve \pm 1V	VR16001 (SS)	*
D, DS Board	White balance and Sub brightness for NTSC, PAL, HD, PC and 625i signals				
DN Board	Set Market Select Number to correct destination by MS mode. (See chap. 6.1.4)				
D, DN Board	Set Ve Mode until bright points disappears by IIC mode.				

*See the Panel Label.

**See chap. 10.1.6.

***See chap. 10.1.7.1.

10.1.3.3. Quick adjustment after Plasma Display Panel exchange

Adjust the following voltages with the multimeter.

Name	Test Point	Voltage	Volume	Remarks
Vsus (SC Side)	TPVSUS (SC)	Vsus \pm 2V	VR251 (P_Main_1)	*
Vsus(SS Side)	TPVSUS (SS)	Vsus \pm 2V	VR251 (P_Main_2)	*
Ve Life	Check Ve Mode. (See chap. 10.1.7.2.)			

*See the Panel Label.

10.1.4. Vsus adjustment

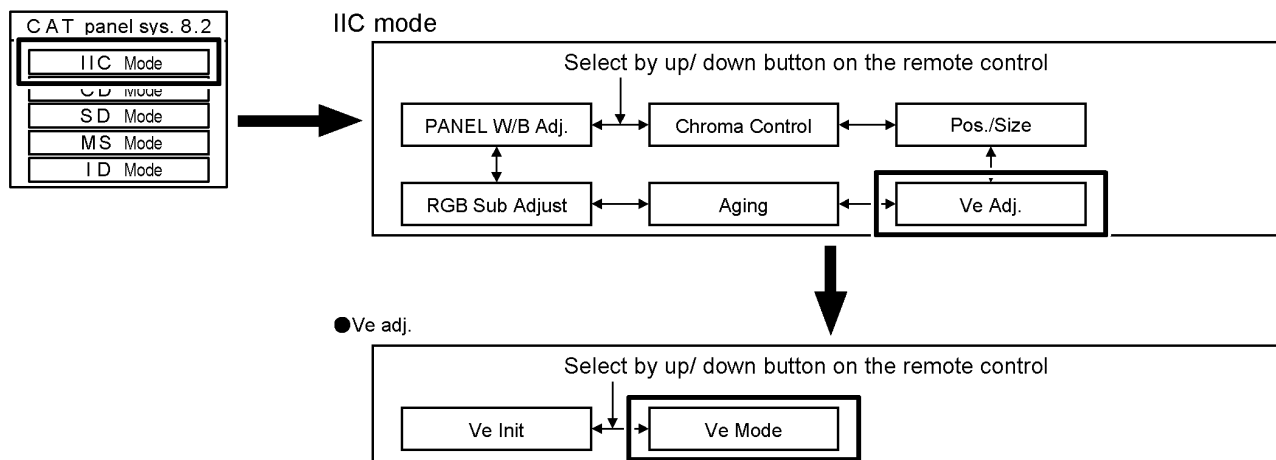
After exchange P board or Plasma Display Panel, see the Panel Label and check TPVSUS and adjust the volume.

10.1.5. Vad adjustment

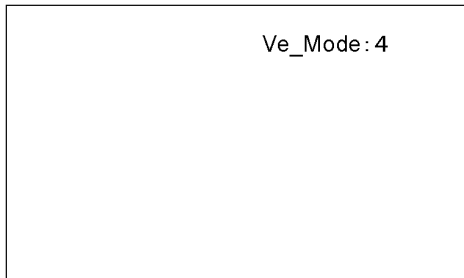
After exchange SC board, check TP9 and adjust the volume.

10.1.6. Ve adjustment

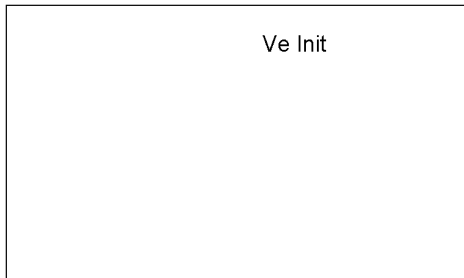
1. After exchange SS board, connect the multimeter to the testpoint TPVE(SS).
2. Select Ve Mode by IIC mode. (See chap. 6.1.1., and 6.2.)



3. Check that the Ve Mode is set to 4.



4. Press R button and then select and display Ve Init.



5. Check TPVE and adjust the volume.
6. Exit the IIC mode.

10.1.7. Ve Life adjustment

10.1.7.1. After exchange both D board and DN board

1. Select Ve Mode by IIC mode. (See chap. 10.1.6.)
2. Check that no bright points appears on the display.
3. If bright points appears, change Ve Mode until bright points disappears.
4. Exit the IIC mode.

Note: If bright/ nolit points still appears, set Ve Mode to 4.

10.1.7.2. After exchange Plasma Display Panel

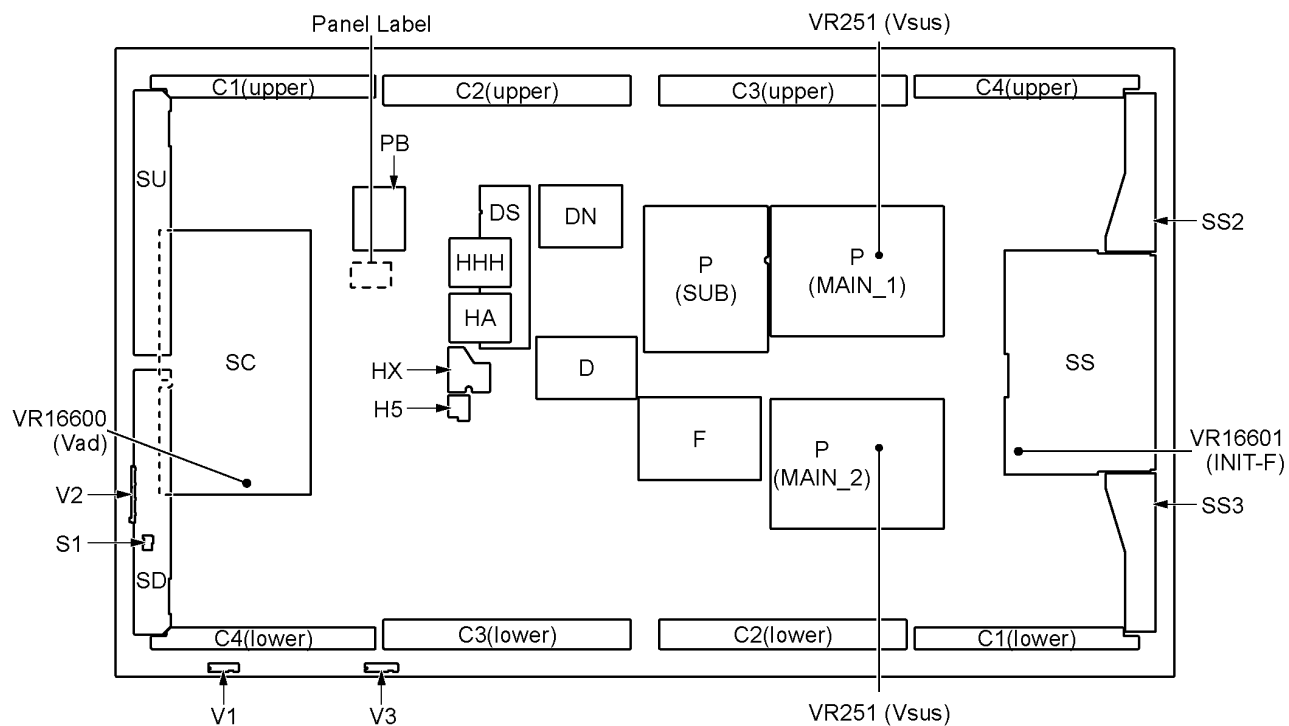
1. Select Ve Mode by IIC mode. (See chap. 10.1.6.)
2. Check that the Ve Mode is set to 4.
3. Check that no bright/nolit points appears on the display.
4. Exit the IIC mode.

10.1.8. Bright or Nolit appears on the display

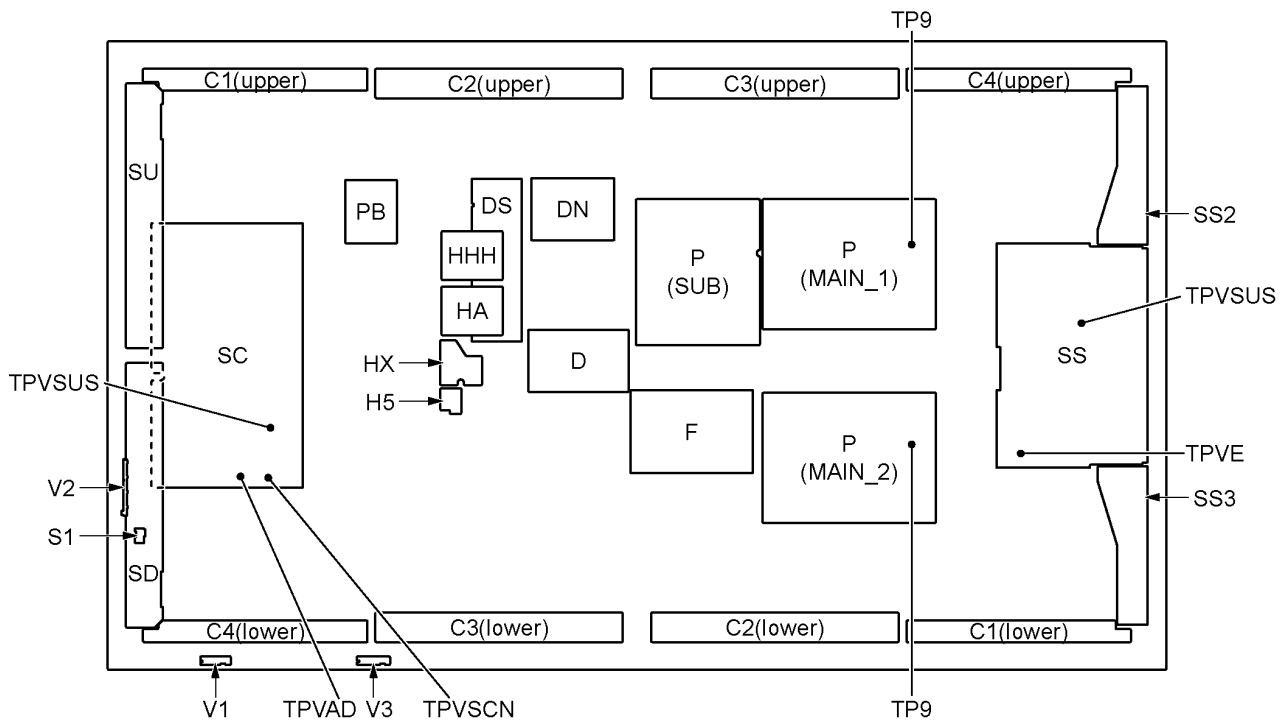
1. Select Ve Mode by IIC mode. (See chap. 10.1.6.)
2. Check and remember the value of Ve Mode.
3. If bright points appears, change Ve Mode lower until bright points disappears.
4. If nolit points appears, change Ve Mode upper until nolit points disappears.
5. Check that no bright/nolit points appears on the display, then exit the IIC mode.

Note: If bright / nolit points still appears, set back Ve Mode to the value you remembered above.

10.1.9. Adjustment Volume Location



10.1.10. Test Point Location



10.2. Adjustment

10.2.1. RGB white balance adjustment

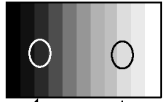
Instrument Name	Connect to	Setting												
<ul style="list-style-type: none"> • RGB VGA60 W / B pattern • Color analyzer (Minolta CA-100 or equivalent) 	PC input Panel surface	User setting: Normal (Picture menu: STANDARD)												
Steps	Remarks													
<p>[Condition]</p> <ul style="list-style-type: none"> • Make sure the front panel to be used on the final set is fitted. • Make sure a color signal is not being shown before adjustment. • Put the color analyzer where there is little color variation. <p>[Adjustment]</p> <ol style="list-style-type: none"> 1. Set COMPONENT / RGB-IN SELECT to RGB. 2. Select the IIC mode "PANEL W / B Adj." item. 3. Check that the color temperature is "COOL (Hi)". 4. Output a white balance pattern. 5. Touch the signal receiver of color analyzer to the highlight window's center. 6. Fix G drive at E0h and adjust B drive and R drive so x, y become the "Color temperature COOL (Hi)" in the below table. 7. Increase R / G / B together so the maximum drive value in R / G / B becomes FCh. 8. Set color temperature to "NORMAL (Mid)". 9. Fix G drive at E0h and adjust B drive and R drive so the highlight window's x, y becomes the "Color temperature NORMAL (Mid)" in the below table. 10. Increase R / G / B together so the maximum drive value in R / G / B becomes FCh. 11. Set color temperature to "WARM (Low)". 12. Set G drive to E0h and adjust B drive and R drive so the highlight window's x, y become the "Color temperature WARM (Low)" shown in the below table. 13. Increase R / G / B together so the maximum drive value in R / G / B becomes FCh. 14. Copy the R drive, G drive and B drive data in NTSC, PAL DVI region. <p>Table 1 W/B adjustment values</p> <table border="1"> <thead> <tr> <th>Color temperature</th><th>x</th><th>y</th></tr> </thead> <tbody> <tr> <td>COOL(Hi)</td><td>0.276</td><td>0.276</td></tr> <tr> <td>NORMAL(Mid)</td><td>0.288</td><td>0.296</td></tr> <tr> <td>WARM(Low)</td><td>0.313</td><td>0.329</td></tr> </tbody> </table> <p>Adjustment target Hi-light: $x \pm 0.003$ $y \pm 0.003$ Hi-light is target of the number at drive adjustment in the hi-light windows. Therefore, it is not target of the hi-light number at after adjustment white balance.</p>	Color temperature	x	y	COOL(Hi)	0.276	0.276	NORMAL(Mid)	0.288	0.296	WARM(Low)	0.313	0.329	<p>Picture Menu: Standard User setting: Normal Aspect: Full (16 : 9) Position and size: Normal</p> <ul style="list-style-type: none"> • "7" key : color temperature select. • "9" key : Picture menu select. <p>• Highlight section Signal amplitude 75%</p> <p>RGB VGA W/B Pattern</p>  <p>• Drive standard G: E0h</p>	
Color temperature	x	y												
COOL(Hi)	0.276	0.276												
NORMAL(Mid)	0.288	0.296												
WARM(Low)	0.313	0.329												

Table 2 Drive data addresses (PC/RGB)

Color temperature	R	G	B
COOL(Hi)	A0-11AD	A0-11AE	A0-11AF
NORMAL(Mid)	A0-11B0	A0-11B1	A0-11B2
WARM(Low)	A0-11B3	A0-11B4	A0-11B5

Table 3 Drive data addresses (nonuse, dummy)

Color temperature	R	G	B
COOL(Hi)	A0-1180	A0-1181	A0-1182
NORMAL(Mid)	A0-1183	A0-1184	A0-1185
WARM(Low)	A0-1186	A0-1187	A0-1188

Table 4 Drive data addresses (nonuse, dummy)

Color temperature	R	G	B
COOL(Hi)	A0-1189	A0-118A	A0-118B
NORMAL(Mid)	A0-118C	A0-118D	A0-118E
WARM(Low)	A0-118F	A0-1190	A0-1191

Table 5 Drive data addresses (nonuse, dummy)

Color temperature	R	G	B
COOL(Hi)	A0-11B6	A0-11B7	A0-11B8
NORMAL(Mid)	A0-11B9	A0-11BA	A0-11BB
WARM(Low)	A0-11BC	A0-11BD	A0-11BE

10.2.2. YUV white balance adjustment

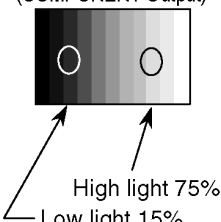
Instrument Name	Connect to	Setting												
<ul style="list-style-type: none"> • HD(1125/60i) W / B pattern (COMPONENT Output) • Color analyzer (Minolta CA-100 or equivalent) 	PC input Panel surface	User setting: Normal (Picture menu: STANDARD)												
Steps	Remarks													
<p>[condition]</p> <ul style="list-style-type: none"> • Make sure the front panel to be used on the final set is fitted. • Make sure a color signal is not being shown before adjustment. • Put the color analyzer where there is little color variation. <p>[Adjustment]</p> <ol style="list-style-type: none"> 1. Set COMPONENT / RGB-IN SELECT to COMPONENT. 2. Select the IIC mode "PANEL W / B Adj." item. 3. Check that the color temperature is "COOL (Hi)". 4. Output a white balance pattern. 5. Touch the signal receiver of color analyzer to the highlight window's center. 6. Fix G drive at E0h and adjust B drive and R drive so x, y become the "Color temperature COOL (Hi)" in the below table. 7. Increase R / G / B together so the maximum drive value in R / G / B becomes FCh. 8. Set color temperature to "NORMAL (Mid)". 9. Fix G drive at E0h and adjust B drive and R drive so the highlight window's x, y becomes the "Color temperature NORMAL (Mid)" in the below table. 10. Increase R / G / B together so the maximum drive value in R / G / B becomes FCh. 11. Set color temperature to "WARM (Low)". 12. Set G drive to E0h and adjust B drive and R drive so the highlight window's x, y become the "Color temperature WARM (Low)" shown in the below table. 13. Increase R / G / B together so the maximum drive value in R / G / B becomes FCh. 14. Copy the R drive, G drive and B drive data in YUV1_525ip, YUV3_625ip region. <p>Table 6 W/B adjustment values</p> <table border="1"> <thead> <tr> <th>Color temperature</th><th>x</th><th>y</th></tr> </thead> <tbody> <tr> <td>COOL(Hi)</td><td>0.276</td><td>0.276</td></tr> <tr> <td>NORMAL(Mid)</td><td>0.288</td><td>0.296</td></tr> <tr> <td>WARM(Low)</td><td>0.313</td><td>0.329</td></tr> </tbody> </table> <p>Adjustment target Hi-light: $x \pm 0.003$ $y \pm 0.003$ Hi-light is target of the number at drive adjustment in the hi-light windows. Therefore, it is not target of the hi-light number at after adjustment white balance.</p>	Color temperature	x	y	COOL(Hi)	0.276	0.276	NORMAL(Mid)	0.288	0.296	WARM(Low)	0.313	0.329	<p>Picture Menu: STANDARD User setting: Normal Aspect: Full (16 : 9) Position and size: Normal</p> <ul style="list-style-type: none"> • "7" key : color temperature select. • "9" key : Picture menu select. <p>• Highlight section Signal amplitude 75%</p> <p>HD W/B Pattern (COMPONENT Output)</p>  <p>• Drive standard G: E0h</p>	
Color temperature	x	y												
COOL(Hi)	0.276	0.276												
NORMAL(Mid)	0.288	0.296												
WARM(Low)	0.313	0.329												

Table 7 Drive data addresses (YUV2_HD)

Color temperature	R	G	B
COOL(Hi)	A0-119B	A0-119C	A0-119D
NORMAL(Mid)	A0-119E	A0-119F	A0-11A0
WARM(Low)	A0-11A1	A0-11A2	A0-11A3

Table 8 Drive data addresses (YUV1_525ip)

Color temperature	R	G	B
COOL(Hi)	A0-1192	A0-1193	A0-1194
NORMAL(Mid)	A0-1195	A0-1196	A0-1197
WARM(Low)	A0-1198	A0-1199	A0-119A







Table 9 Drive data addresses (YUV3_625ip)

Color temperature	R	G	B
COOL(Hi)	A0-11A4	A0-11A5	A0-11A6
NORMAL(Mid)	A0-11A7	A0-11A8	A0-11A9
WARM(Low)	A0-11AA	A0-11AB	A0-11AC

11 Block Diagram

11.1. Diagram Notes

Notes:

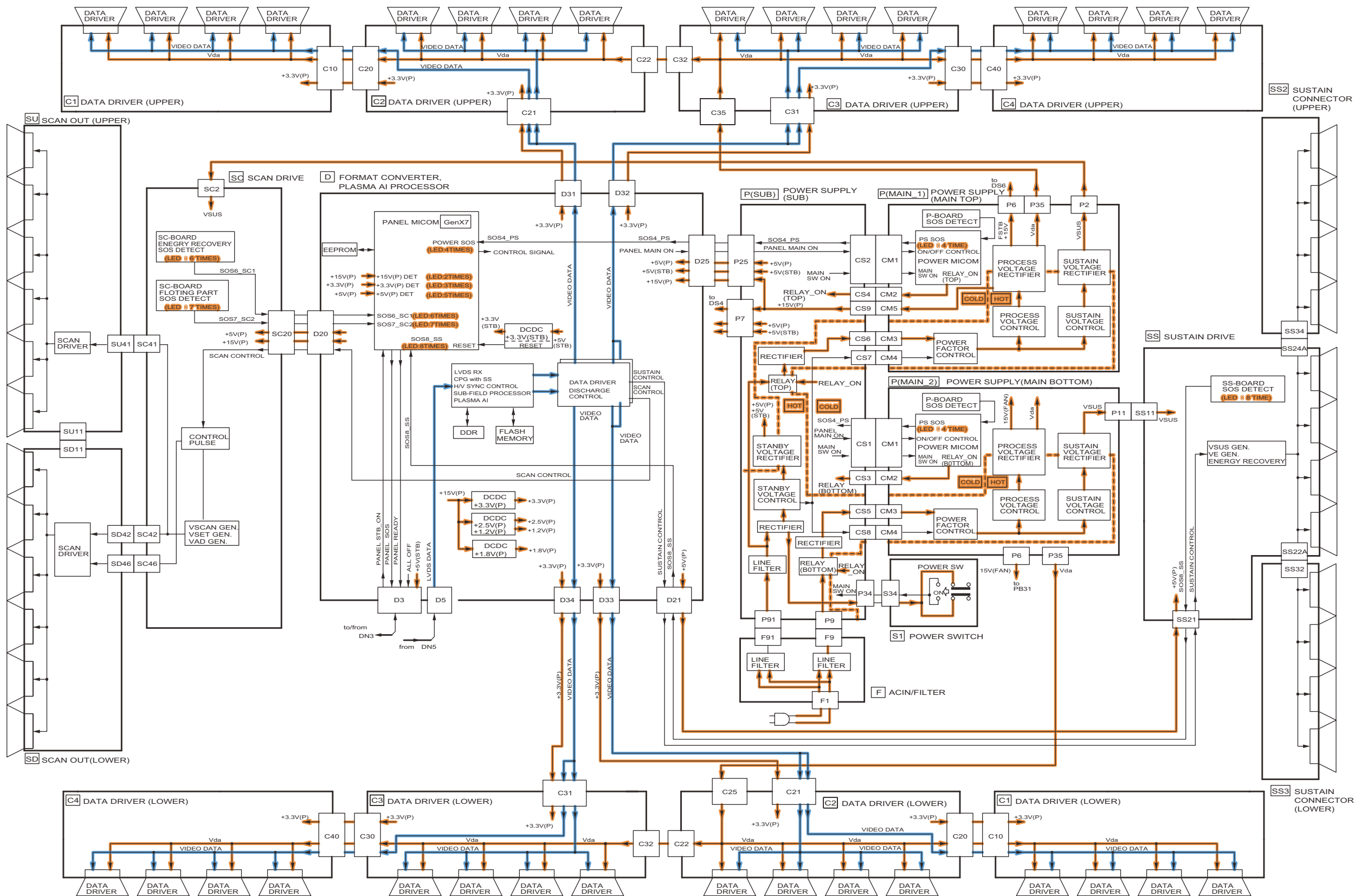
- 1. **Resistor**
Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).
- 2. **Capacitor**
Unit of capacitance is μ F, unless otherwise noted.
- 3. Coil
Unit of inductance is H, unless otherwise noted.
- 4. Test Point
 : Test Point position
- 5. Earth Symbol
 : Chassis Earth (Cold)  : Line Earth (Hot)
- 6. Voltage Measurement
Voltage is measured by a DC voltmeter.
Conditions of the measurement are the following:
Power Source AC120V, 50/60Hz
Receiving Signal Color Bar signal (RF)
All customer's controls Maximum positions
- 7. When arrow mark () is found, connection is easily found from the direction of arrow.
- 8. Indicates the major signal flow. : Video  Audio 
- 9. This schematic diagram is the latest at the time of printing and subject to change without notice.

Remarks:

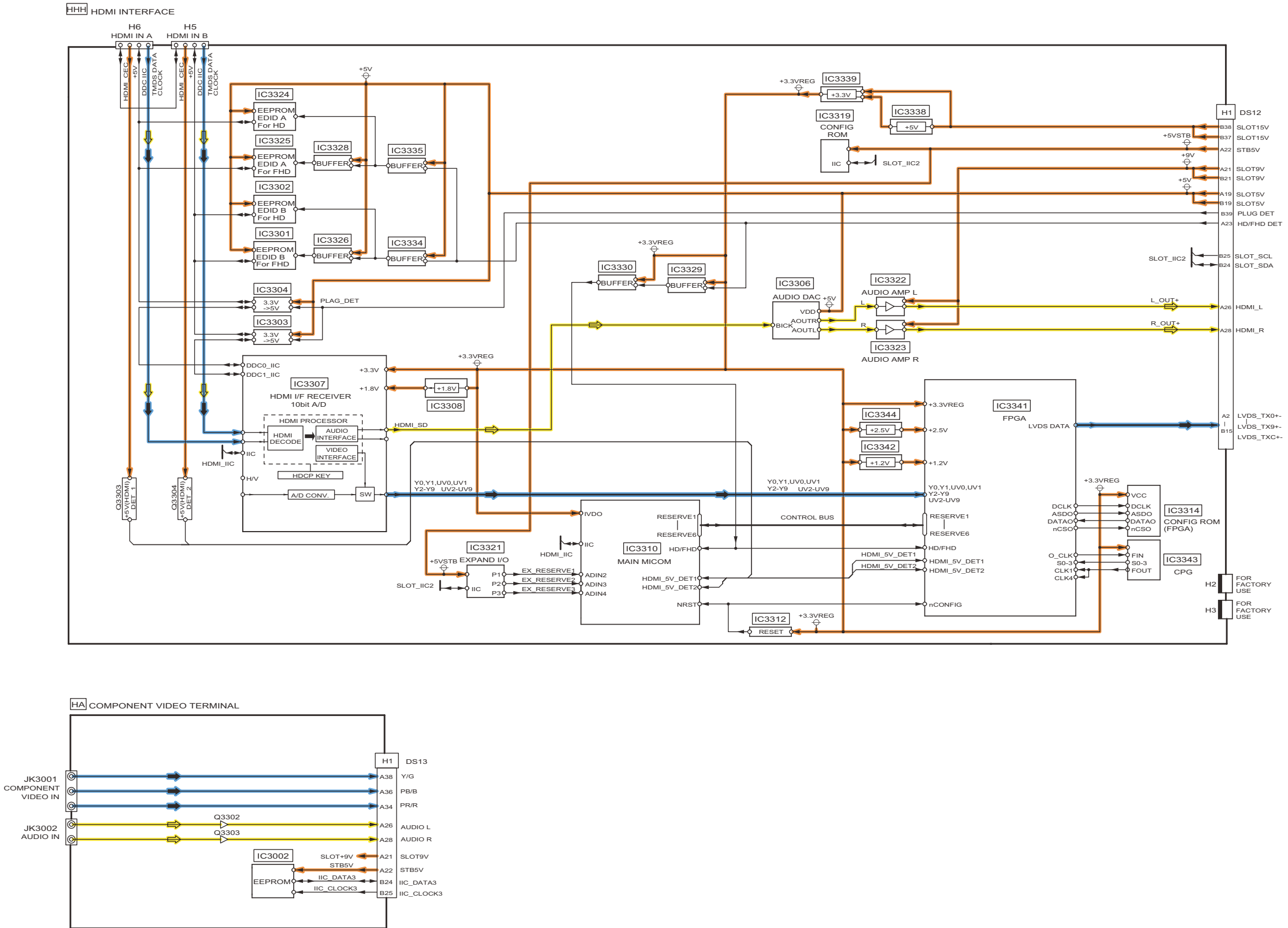
- 1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.
The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.
All circuits, except the Power Circuit, are cold.
Precautions
 - a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
 - b. Do not short- circuit the hot and cold circuits or a fuse may blow and parts may break.
 - c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.
Connect the earth of instruments to the earth connection of the circuit being measured.
 - d. Make sure to disconnect the power plug before removing the chassis.



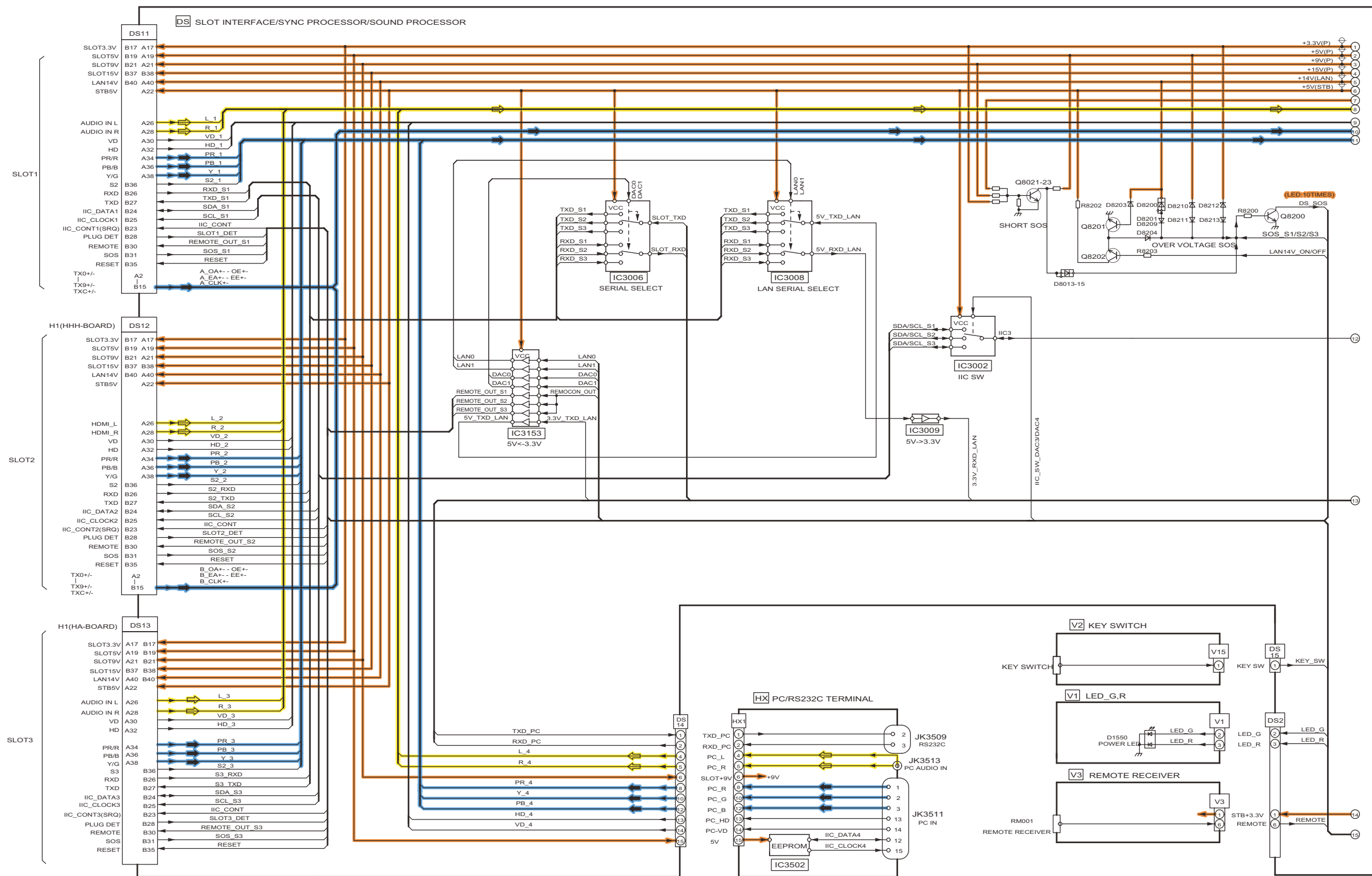
11.3. Main Block (2 of 2) Diagram



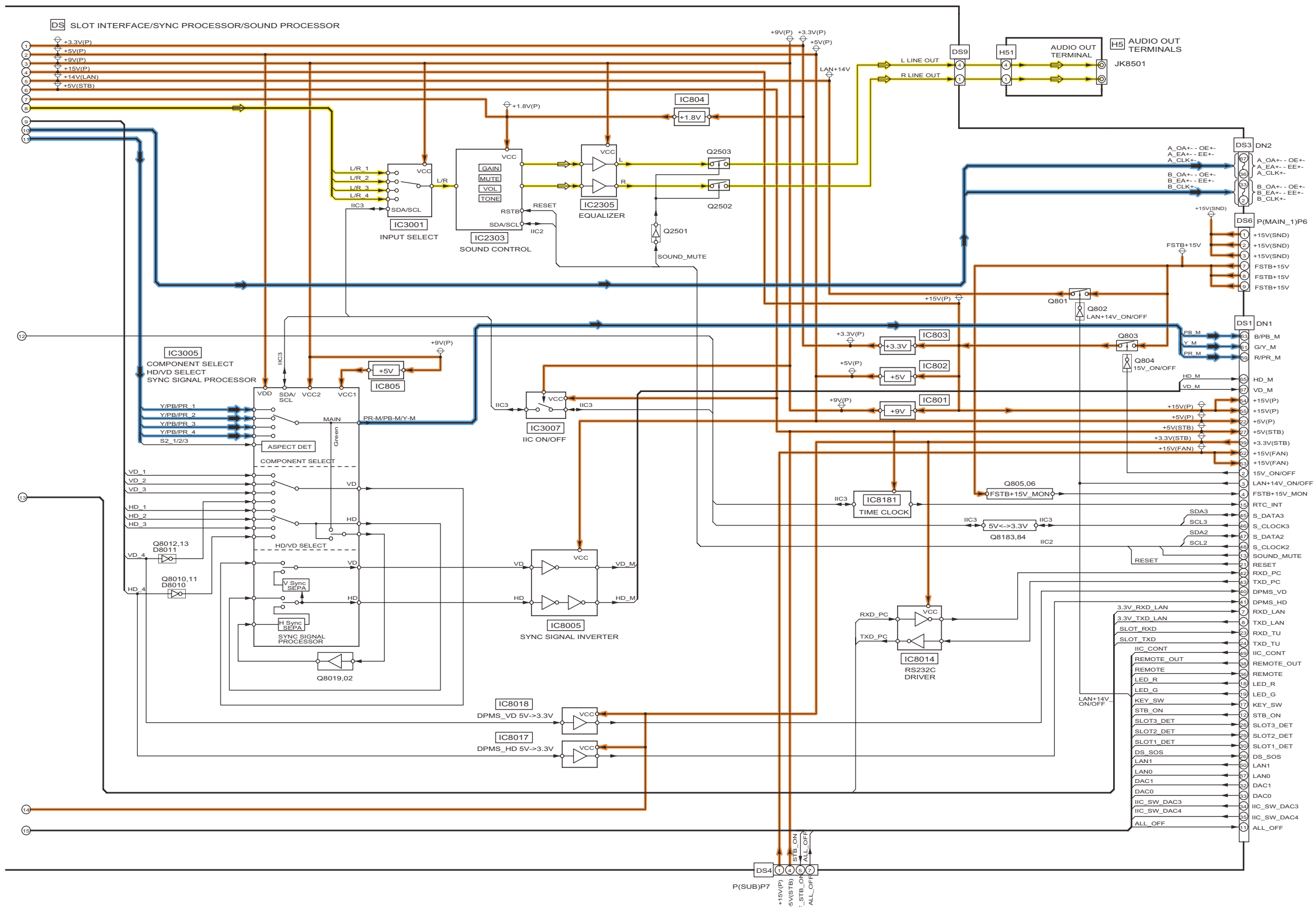
11.4. Block (1 of 8) Diagram



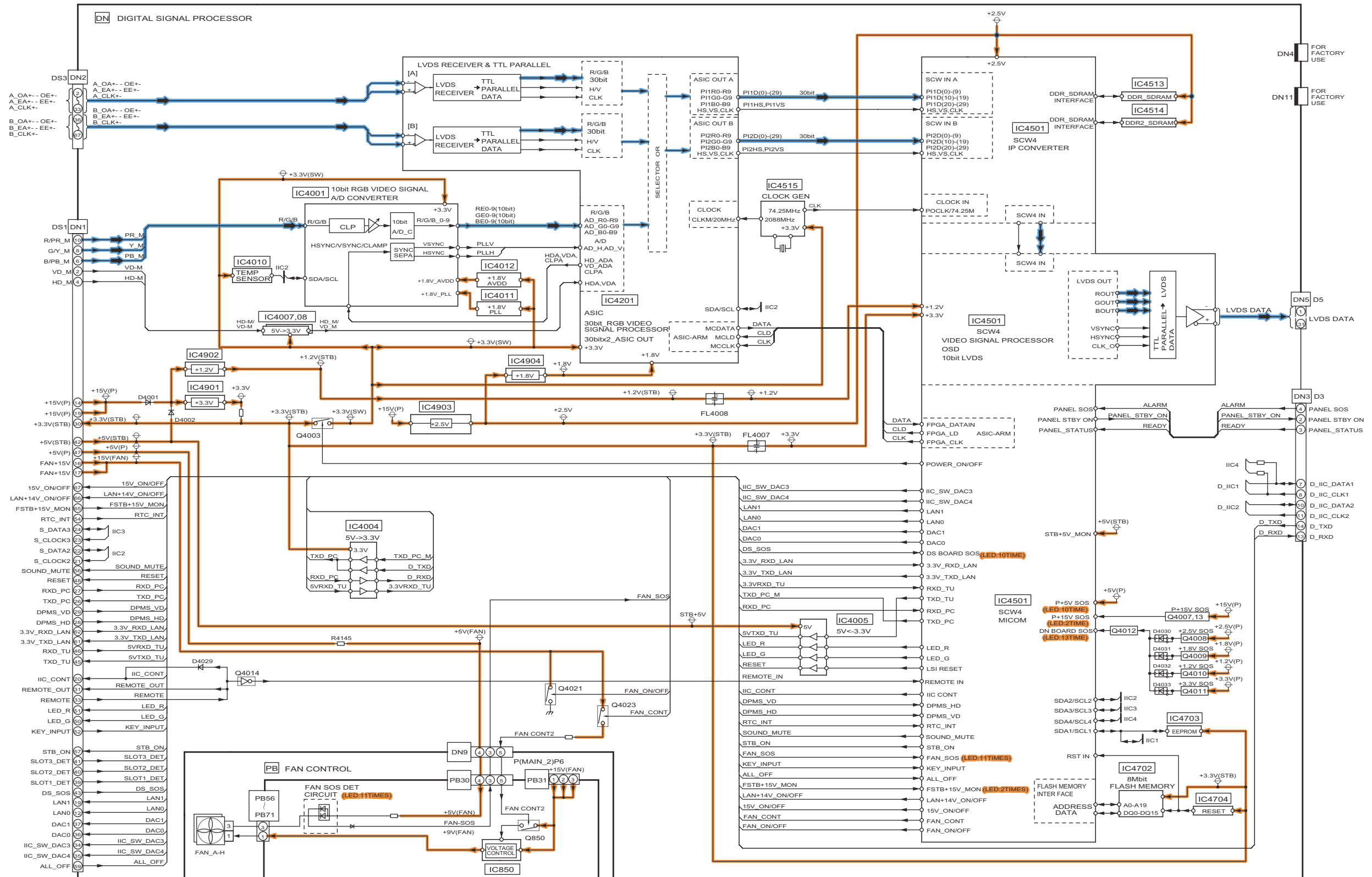
11.5. Block (2 of 8) Diagram



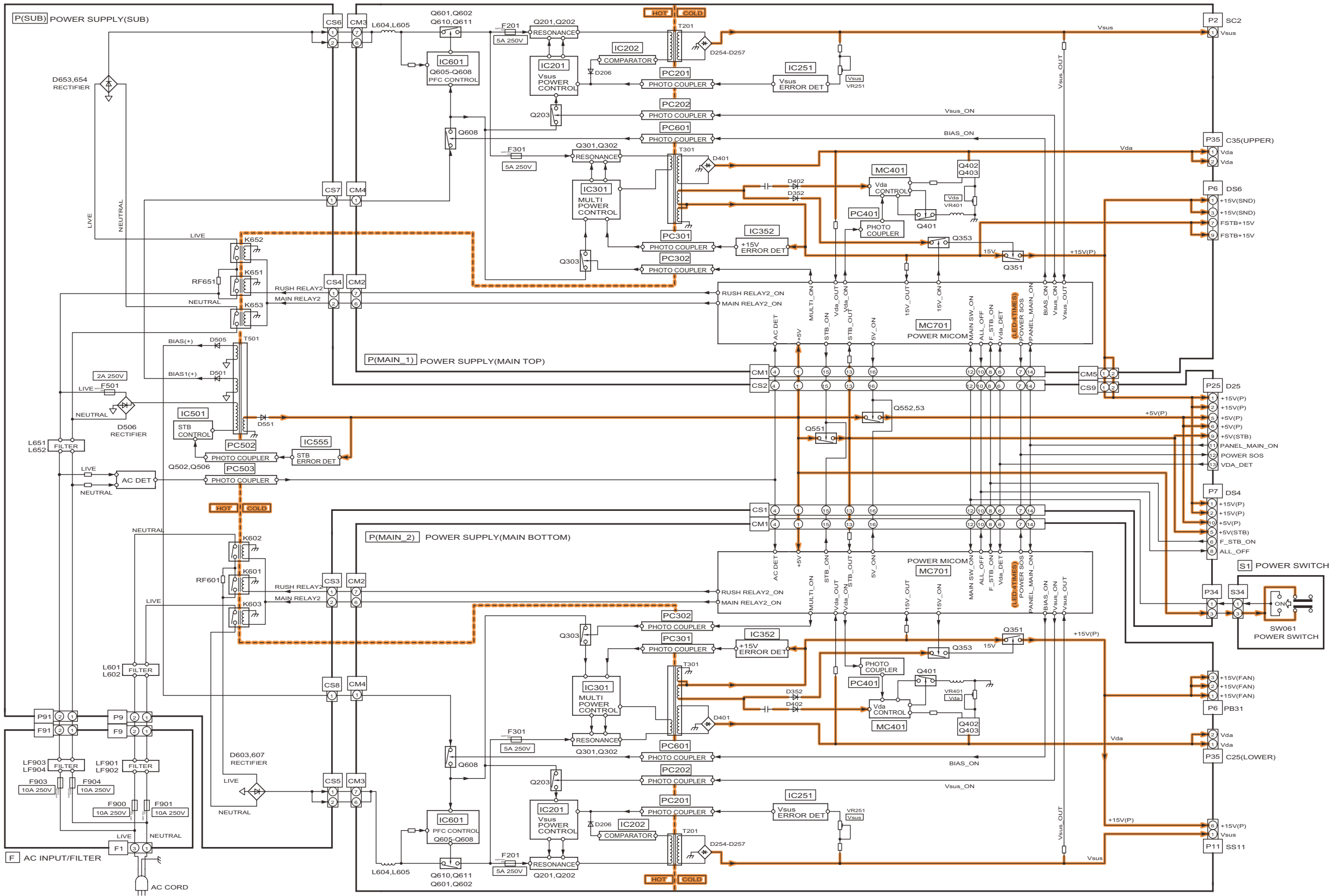
11.6. Block (3 of 8) Diagram



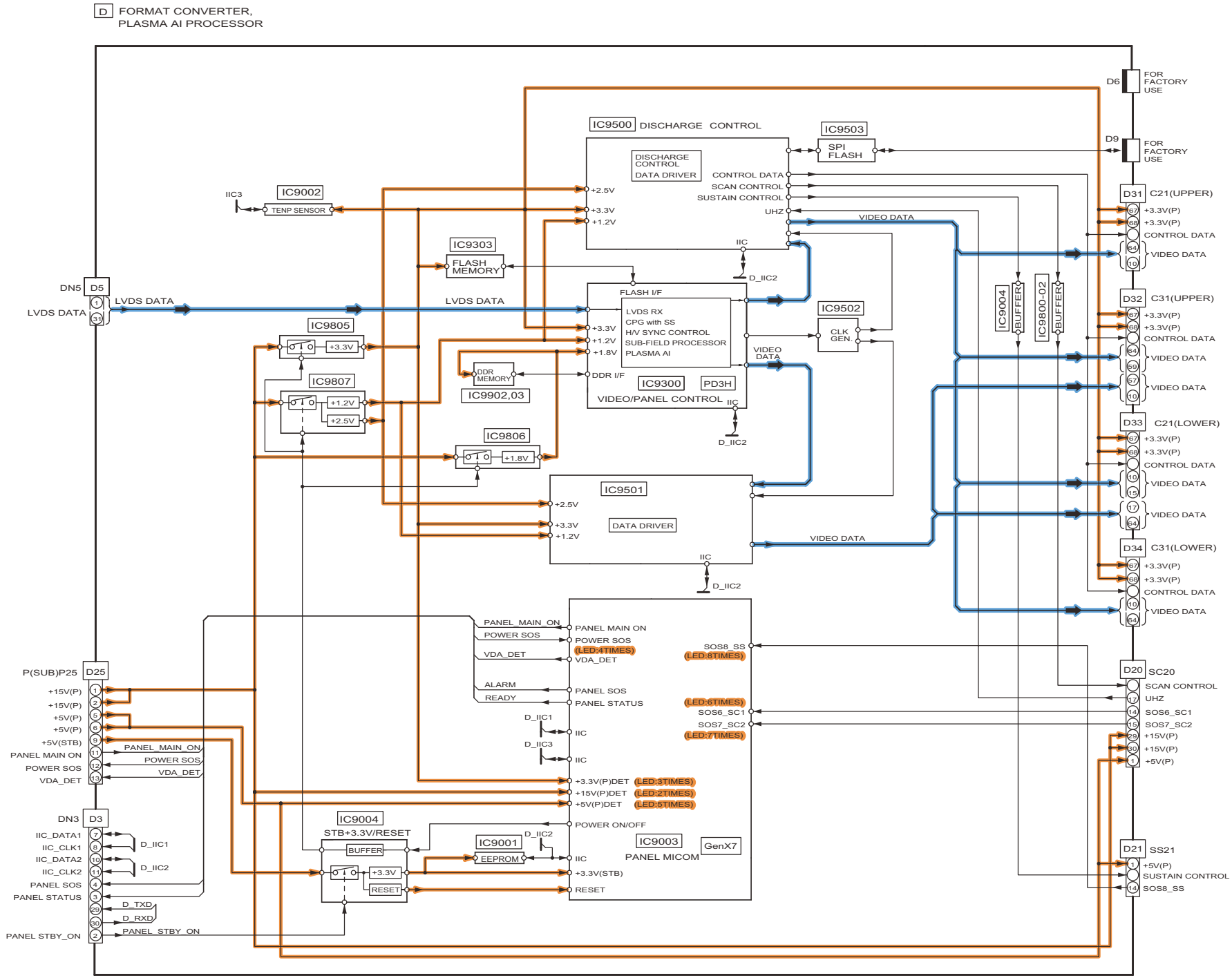
11.7. Block (4 of 8) Diagram

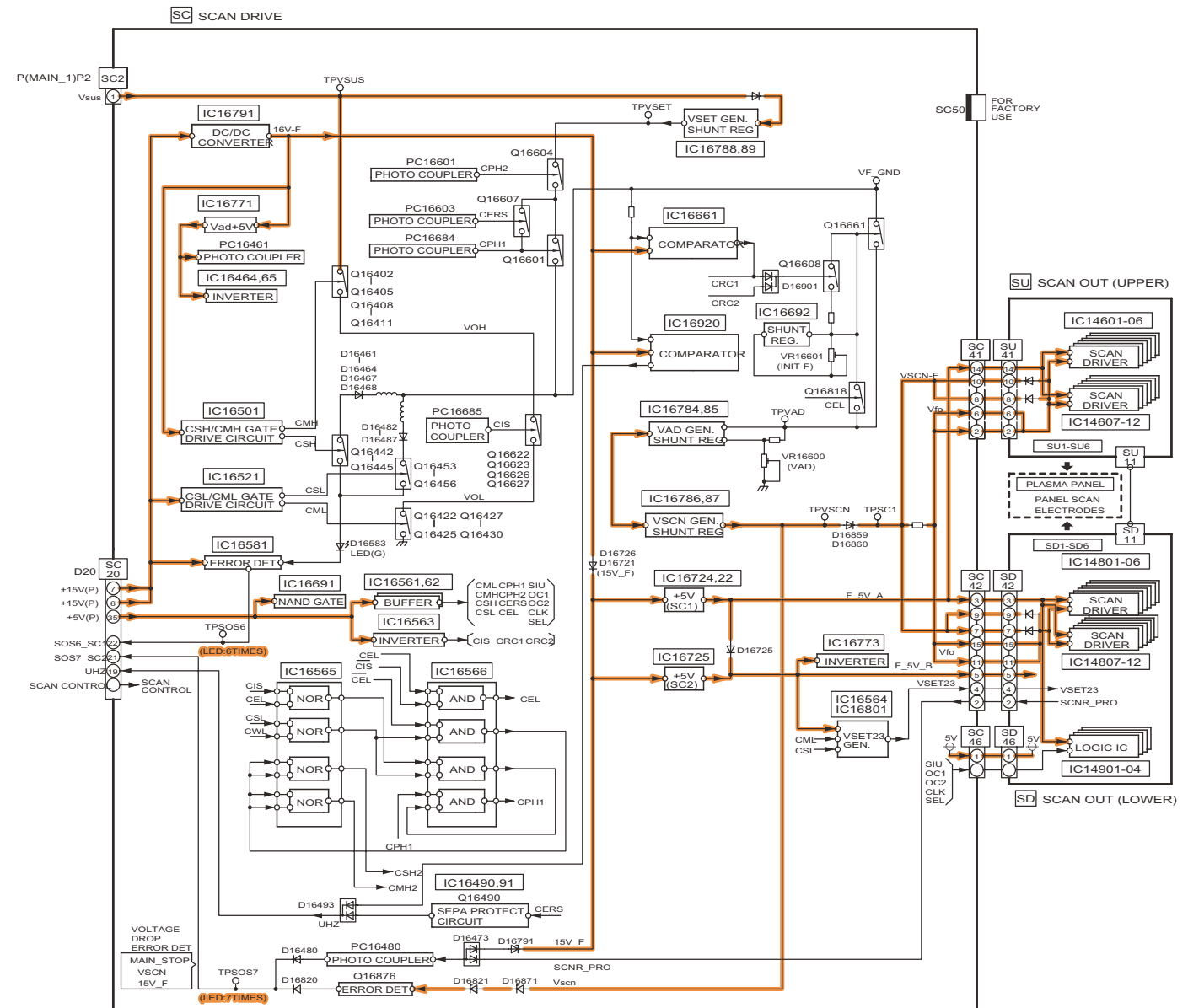


11.8. Block (5 of 8) Diagram

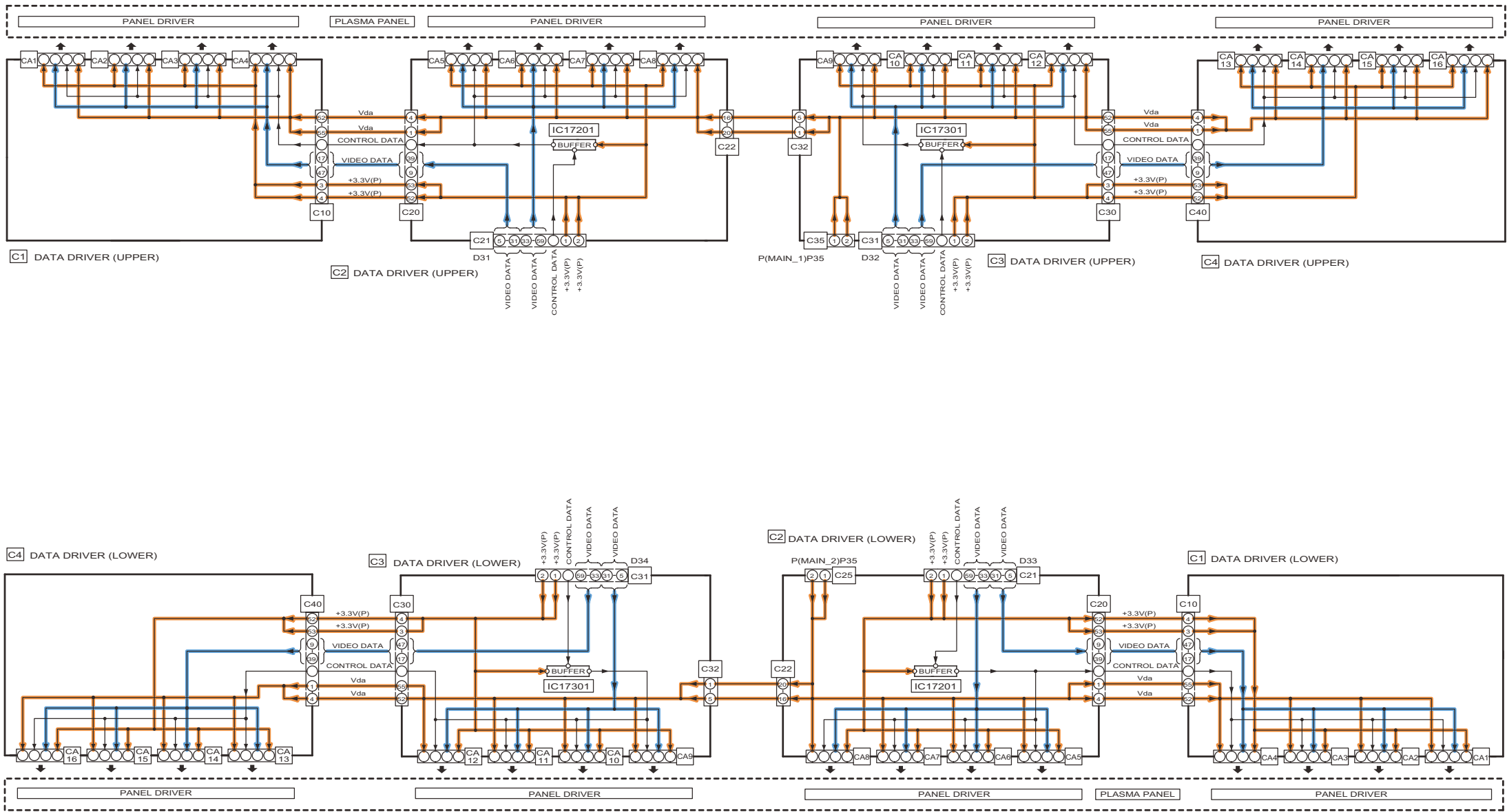


11.9. Block (6 of 8) Diagram



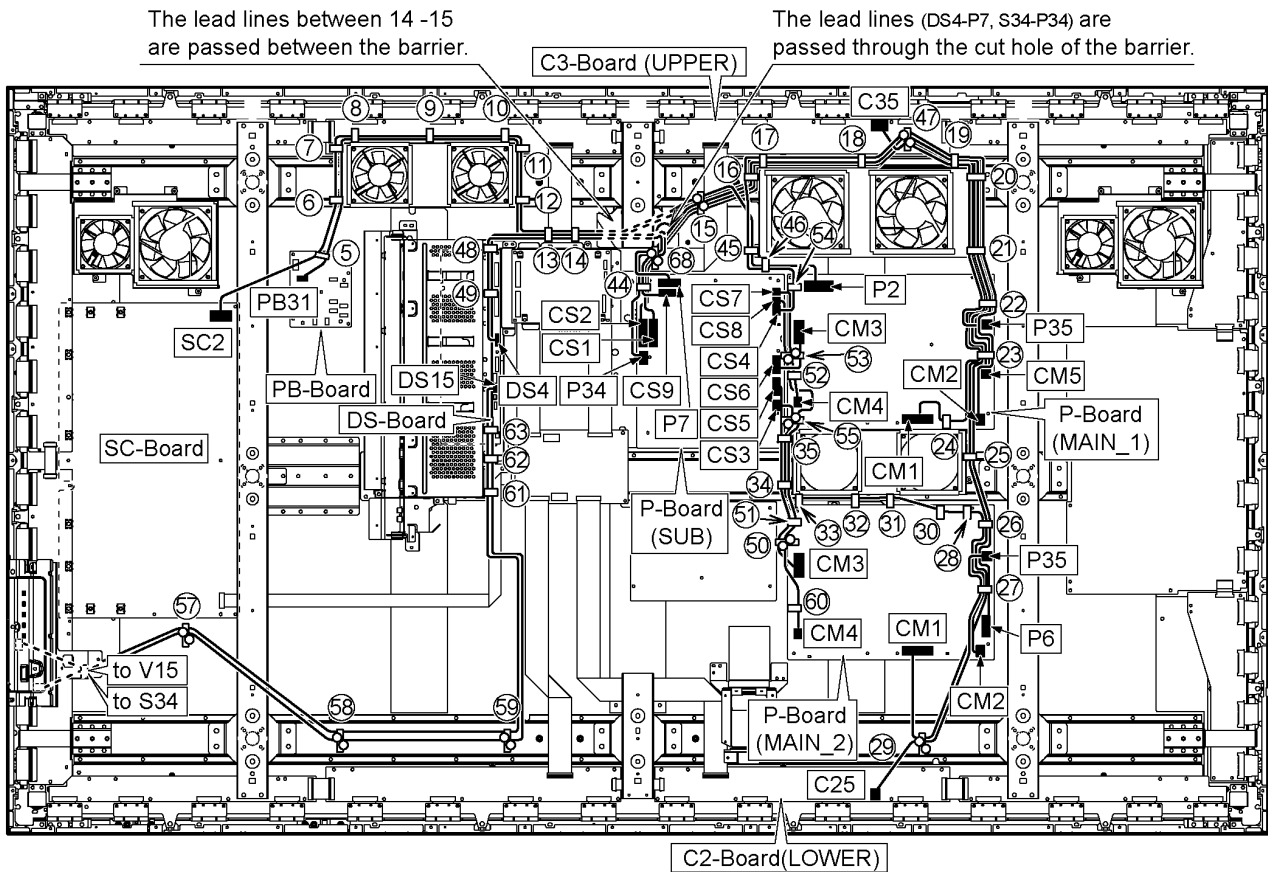


11.11. Block (8 of 8) Diagram



12 Wiring Connection Diagram

12.1. Wiring (1)



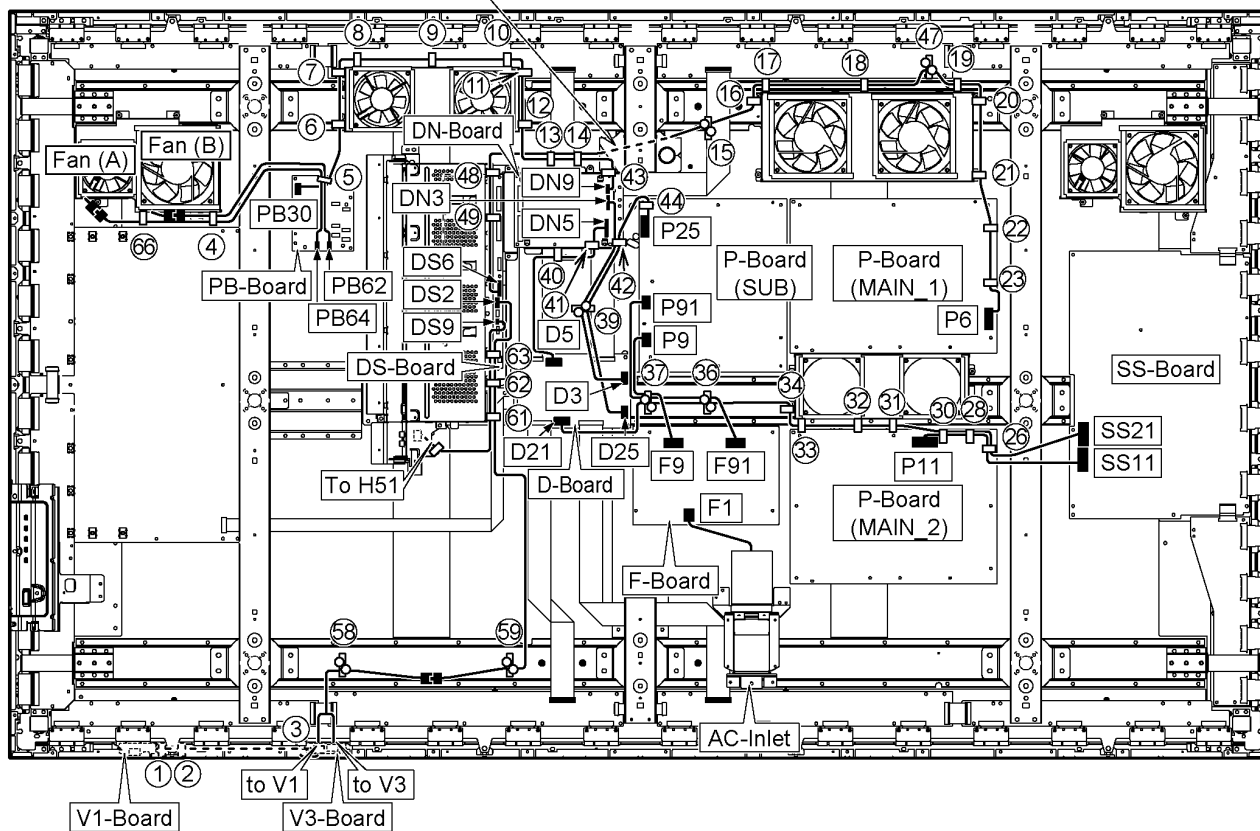
Clamp position

CON:No - CON:No	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗	㉘	㉙	㉚	㉛	㉜	㉝	㉞		
CS1 - CM1(P MAIN_2)											●	●	●	●	●	●	●	●	●		●	●	●	●	●	●				●	●	
CS2 - CM1(P MAIN_1)											●		●	●	●	●	●	●	●	●						●				●		●
CS4 - CM2(P MAIN_1)													●	●	●	●	●	●	●	●								●	●	●	●	
CS9 - CM5(P MAIN_1)											●	●	●	●	●	●	●	●	●								●			●		●
P2(P MAIN_1) - SC2	●	●	●	●	●	●	●	●	●	●	●																		●	●		
P6(P MAIN_2) - PB31	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●							●		
P35(P MAIN_1)-C35(C3 UPPER)														●	●	●	●													●		
P35(P MAIN_2)- C25(C2 LOWER)																							●	●								

CON:No - CON:No	13	14	26	27	29	30	31	32	33	34	35	44	48	49	50	51	52	53	55	57	58	59	60	61	62	63	64	68
CS3 - CM2(P MAIN_2)			●	●	●	●	●	●	●	●	●								●									
CS5 - CM3(P MAIN_2)										●	●					●	●		●									
CS6 - CM3(P MAIN_1)																			●									
CS7 - CM4(P MAIN_1)																		●	●									
CS8 - CM4(P MAIN_2)										●	●					●	●	●	●	●				●				
DS4 - P7(P SUB)	●	●										●	●	●														●
S34 - P34	●	●										●	●	●							●	●	●		●	●	●	●
V15 - DS15																				●	●	●		●	●	●		

12.2. Wiring (2)

The lead line between 14 -15
is passed between the barrier.



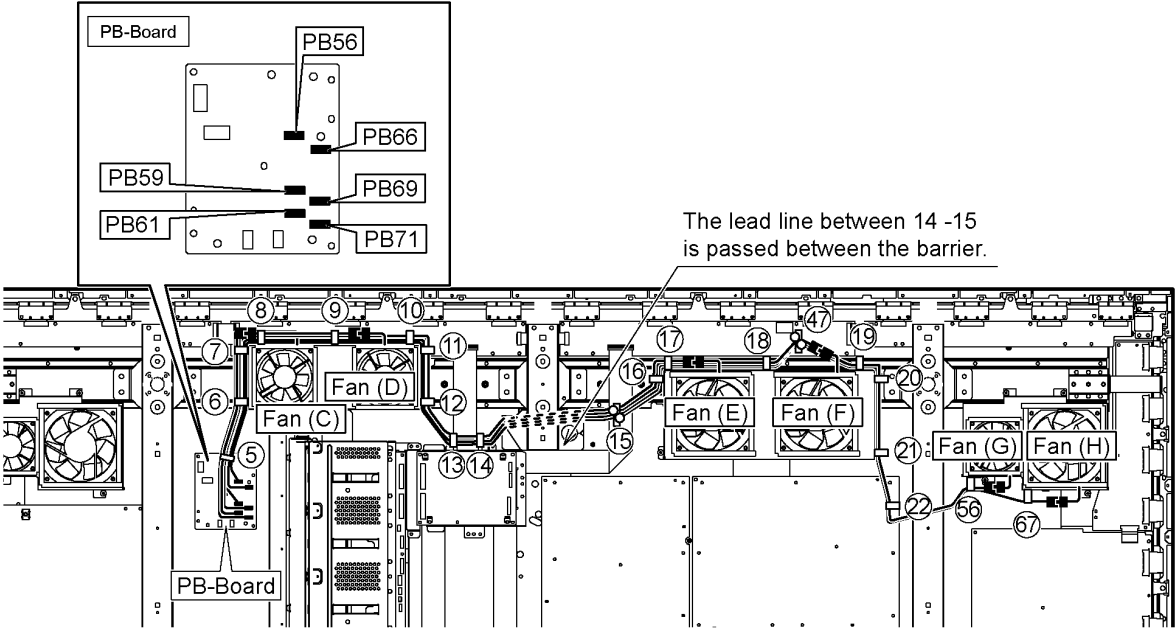
Clamp position

CON:No - CON:No	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗	㉘	㉙	㉚	㉛	㉜	㉝	㉞	㉟	㊱	㊲	㊳	㊴	㊵	㊶	㊷	㊸	㊹	㊺	㊻	㊼	㊽	㊾	㿿
D25 - P25(P SUB)																																																		
DN3 - D3																																																		
DN5 - D5																																																		
DN9 - PB30																																																		
DS9 - H51																																																		
Fan(A)-Relay - PB64																																																		
Fan(B)-Relay - PB62																																																		
V1 - Relay-DS2																																																		
V3 - Relay-DS2																																																		

CON:No - CON:No	13	14	15	16	17	18	19	20	21	22	23	26	28	30	31	32	33	34	36	37	47	48	49
D21 - SS21												●	●	●			●	●	●				
DS6 - P6(P MAIN_1)	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	●		●	●	●
P11(P MAIN_2) -SS11												●	●	●									
P9 - F9																				●			
P91 - F91																			●	●			
AC-Inlet - F1	No Clamp																						

No Clamp

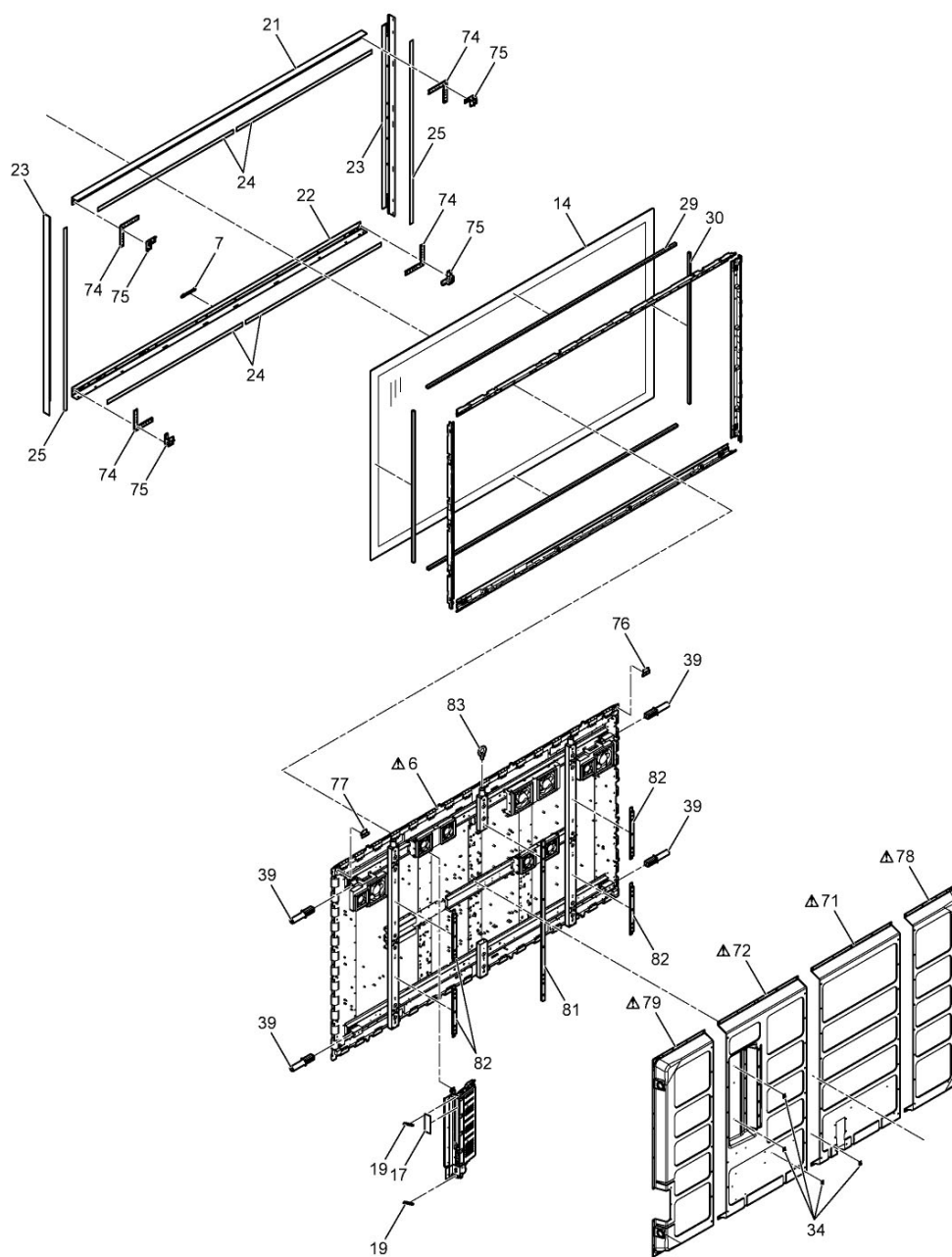
12.3. Wiring (3)



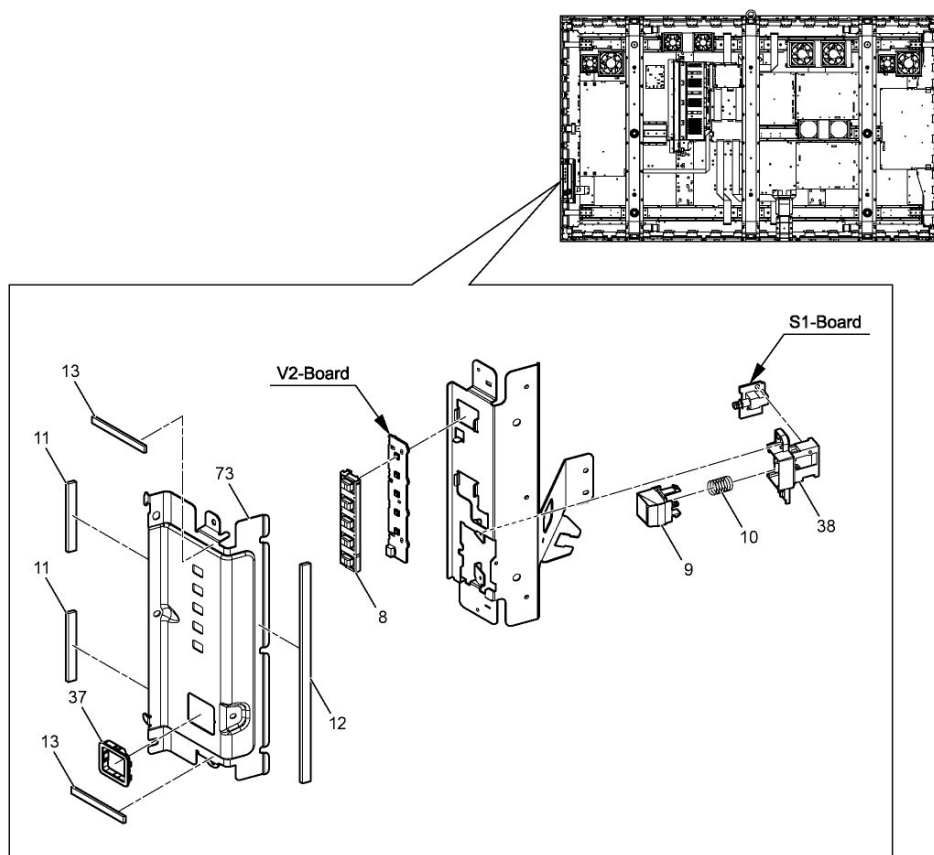
Clamp position

CON:No - CON:No	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗	㉘	㉙	㉚	㉛	㉜	㉝	㉞	㉟
Fan(C)-Relay-PB71	●	●	●	●																											
Fan(D)-Relay-PB61	●	●	●	●	●																										
Fan(E)-Relay-PB69	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Fan(F)-Relay-PB59	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Fan(G)-Relay-PB66	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Fan(H)-Relay-PB56	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

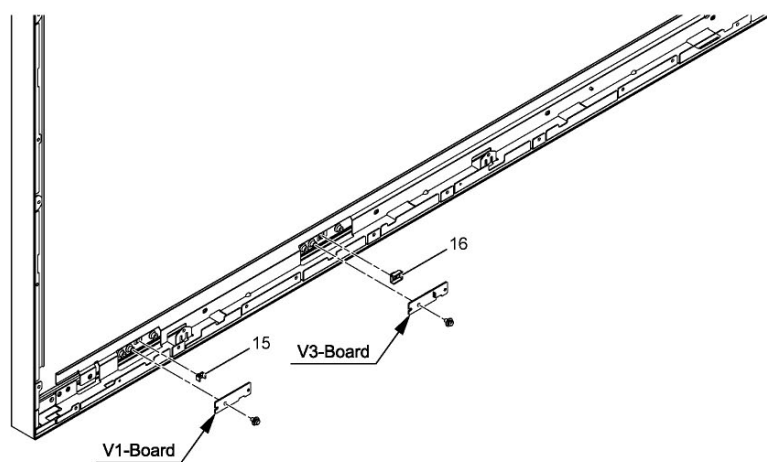
Model No. : TH-85PF12U Exploded View



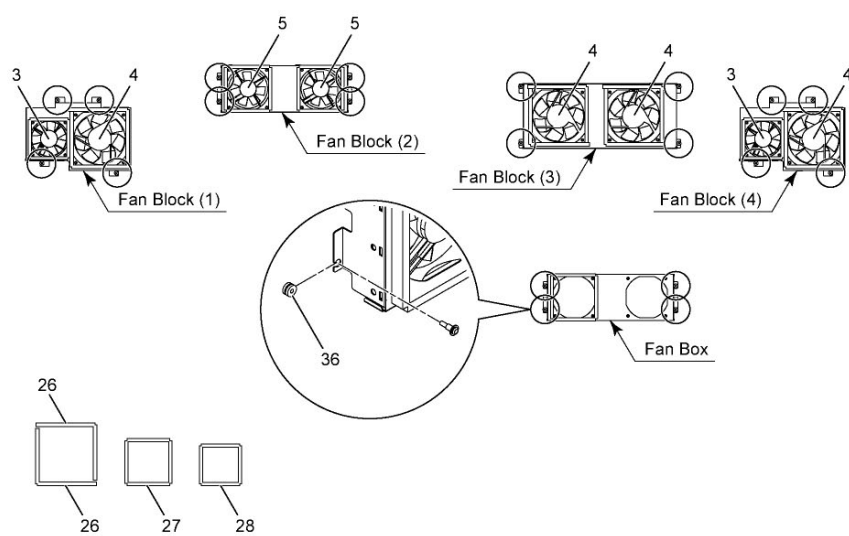
Model No. : TH-85PF12U Side Power part location



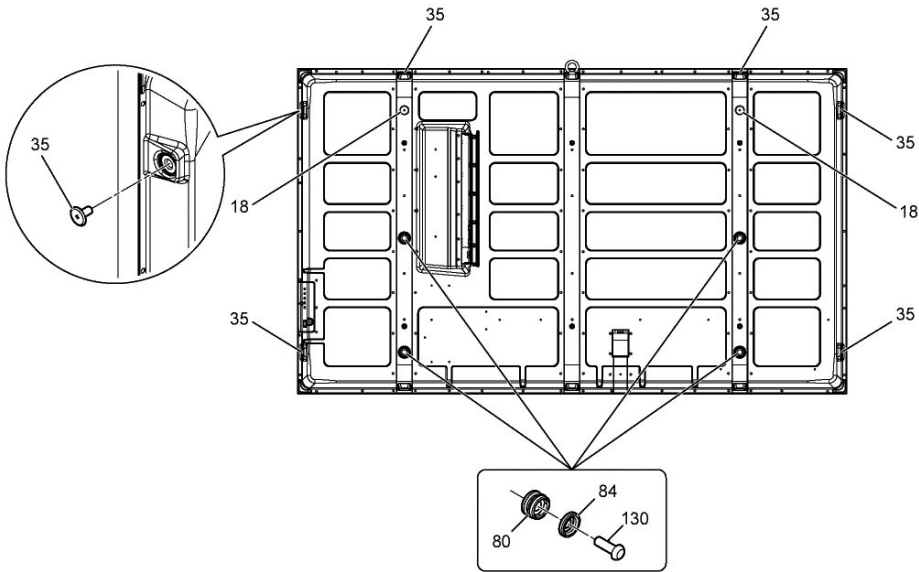
Model No. : TH-85PF12U Cabinet part location



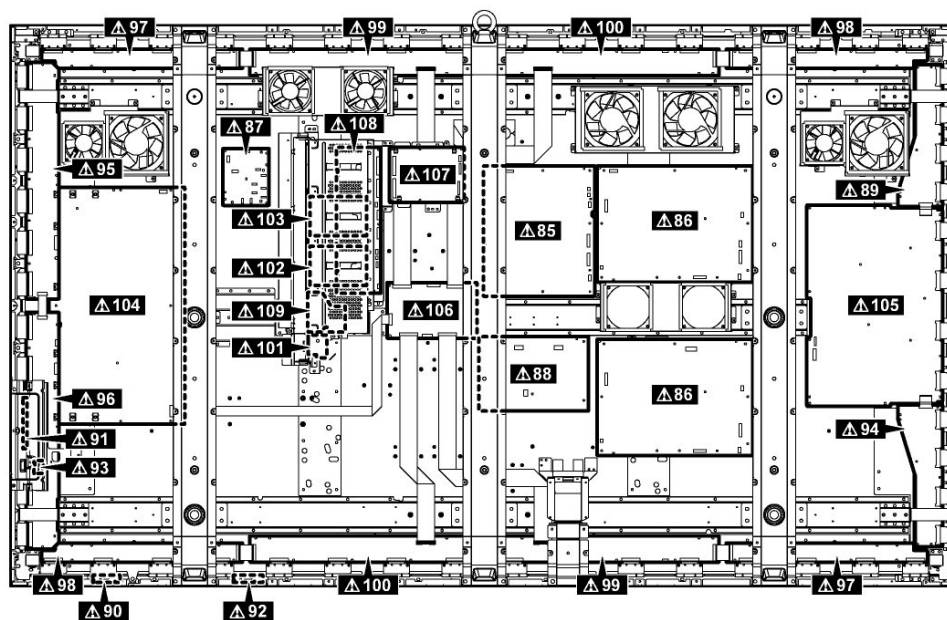
Model No. : TH-85PF12U Fan part location

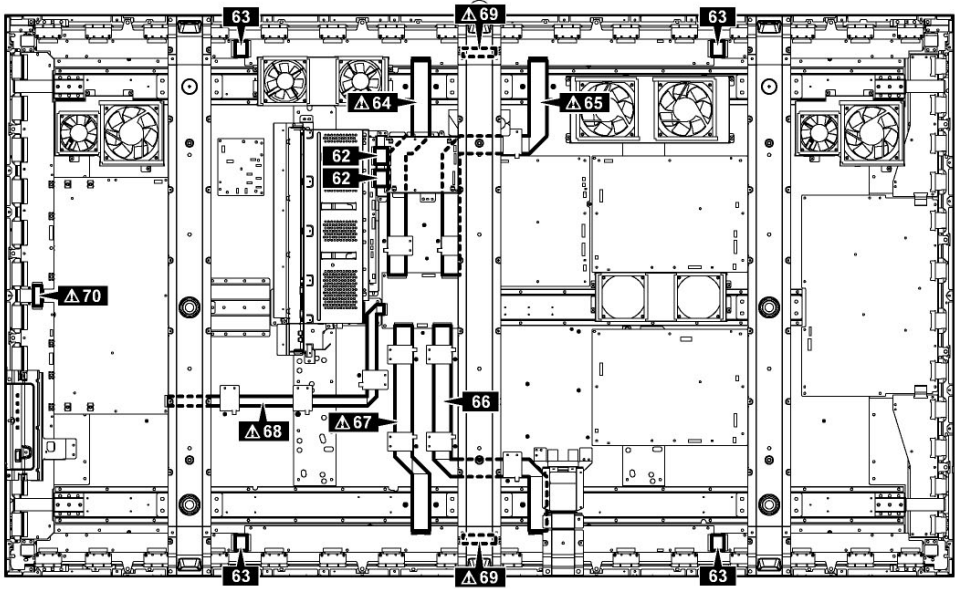


Model No. : TH-85PF12U Rear cover location

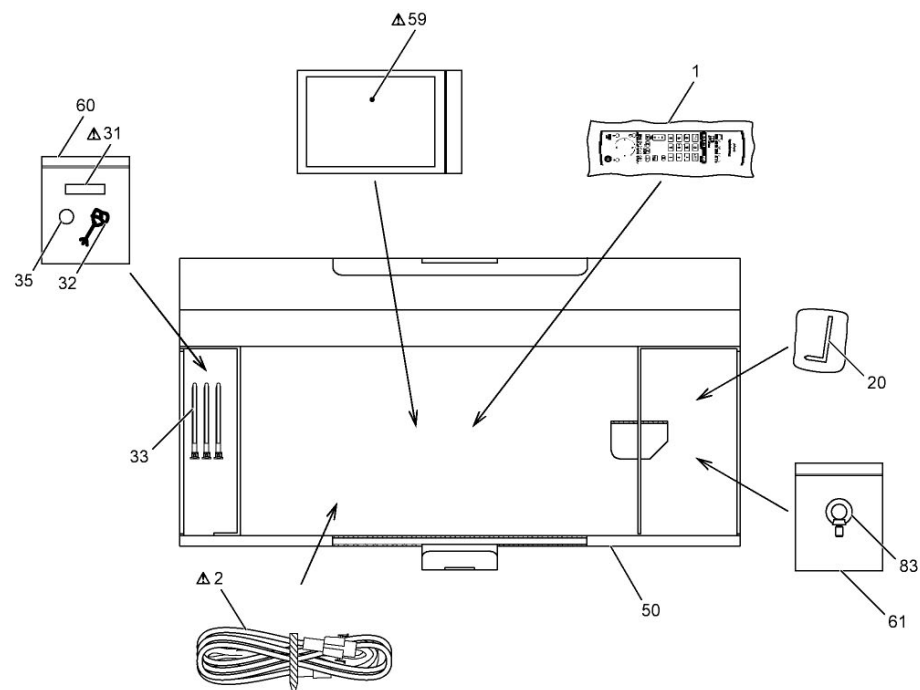


Model No. : TH-85PF12U Print Circuit Board

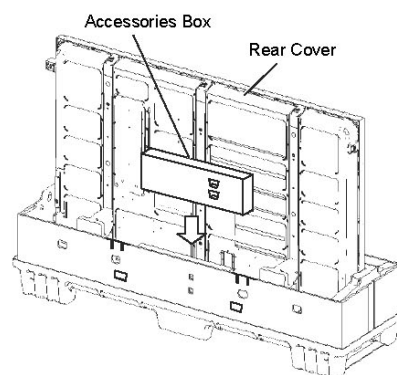
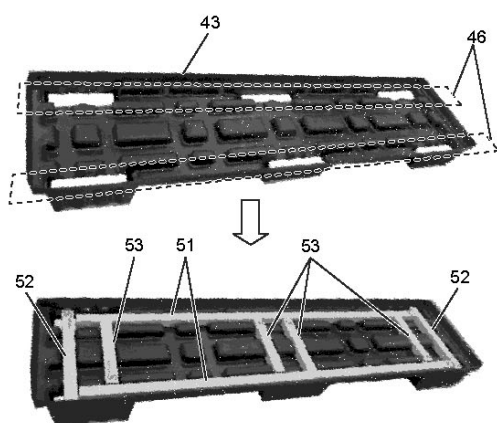
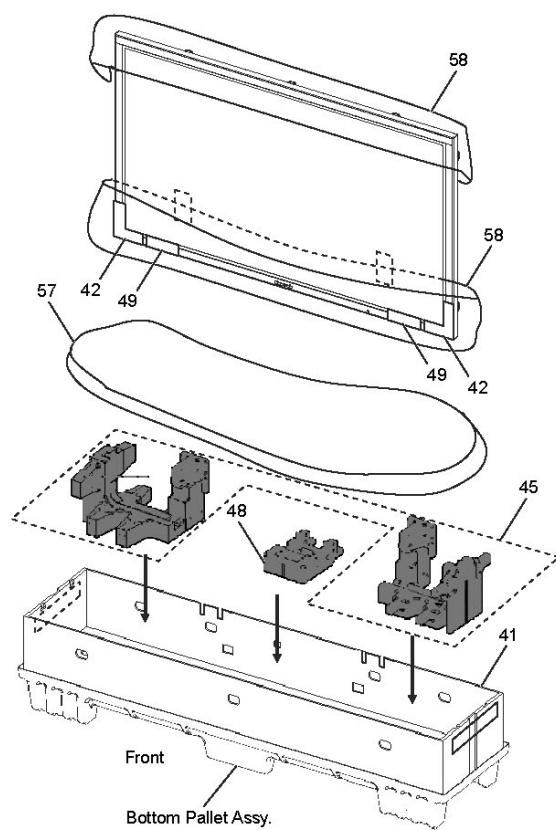


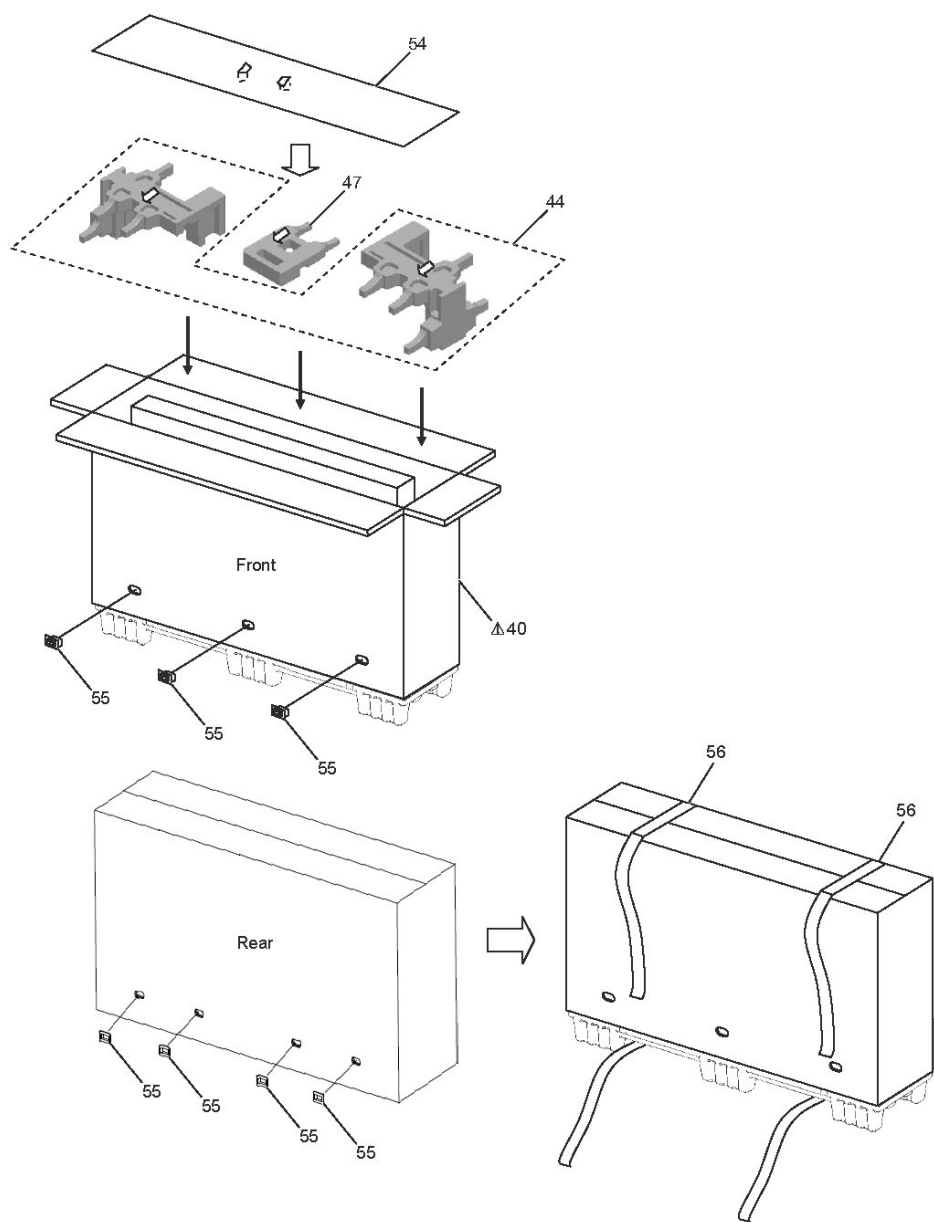


Model No. : TH-85PF12U Packing and Accessories (1)






Model No. : TH-85PF12U Packing (2)


















Model No. : TH-85PF12U Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	1	EUR7636070R	REMOTE CONTROLLER	1	
	2	K2CH3YY00002	AC CORD	1	
	3	L6FAYYYH0030	FAN UNIT (80)	2	
	4	L6FAYYYH0031	FAN UNIT (120)	4	
	5	L6FAYYYH0133	FAN UNIT (92)	2	
	6	MD85F12S1J	PLASMA DISPLAY PANEL	1	
	7	TBMA340	PANASONIC BADGE	1	
	8	TBXA46703A	5 RANGE BUTTON	1	
	9	TBXA50001	POWER BUTTON	1	
	10	TESD031	POWER BUTTON SPRING	1	
	11	TEWA034	GASKET(T2X5X50) (SIDE POWER SW COVER)	2	
	12	TEWA051	GASKET(T2X5X200) (SIDE POWER SW COVER)	1	
	13	TEWA202	GASKET(T1X5X45) (SIDE POWER SW COVER)	2	
	14	TKGA5597	FRONT GLASS	1	
	15	TKKC5213-1	LED PANEL	1	
	16	TKKC5276	REMOTE SENSOR PANEL	1	
	17	TKKL5266-1	BLANK PLATE	1	
	18	TKKL5370	EYE BOLT COVER	2	
	19	TKKL5428	SIDE COVER	2	
	20	TKKX0015	HEXAGONAL WRENCH	1	
	21	TKYA41301T	CABINET UPPER	1	ENCLOSED 2 FELT TAPES
	22	TKYA41401T	CABINET BOTTOM	1	ENCLOSED 2 FELT TAPES AND PANASONIC BADGE
	23	TKYA41501T	CABINET SIDE	2	ENCLOSED FELT TAPE
	24	TMKA982	FELT (CABINET U/L)	4	
	25	TMKA983	FELT (CABINET L/R)	2	
	26	TMKG405	SPONGE (FAN)	8	
	27	TMKG685	SPONGE (FAN)	3	
	28	TMKH135	FAN SPONGE	2	
	29	TMKH163	SPONGE (GLASS/UPPER/LOWER)	4	
	30	TMKH164	SPONGE (GLASS/LEFT/RIGHT)	2	
	31	TMKY892	BLIND SHEET	1	
	32	TMM15412-2	CLAMPER	1	
		TMM16473-1	CLAMPER	7	
		TMM6428-1	CLAMPER	2	
		TMM6496-1	CLAMPER	5	
		TMM7464-2	CLAMPER	1	
		TMM7468-1	CLAMPER	1	
		TMMD010	CLAMPER	1	
		TMME061	CLAMPER	2	
		TMME088	CLAMPER	2	
		TMME088	CLAMPER	7	
		TMME185	NYLON RIVET	3	
		TMME190	CLAMPER	1	


























Model No. : TH-85PF12U Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		TMME190	CLAMPER	5	
	33	TMME203	CLAMPER	3	
	34	TMME228	BAND HOLDER	4	
		TMME237	CABLE CLAMPER	9	
		TMME261	CLAMPER	2	
		TMME291	EDGE SADDLE	8	
		TMME292	CLAMPER	8	
		TMME293	CLAMPER	1	
		TMME307	CLAMPER	5	
	35	TMME375	EYE BOLT COVER M12	7	
		TMME377	CLAMPER	1	
	36	TMMJ068	RUBBER (FAN)	20	
		TMMK255	RUBBER WASHER	1	
	37	TMMX157	POWER BUTTON EDGE GUARD	1	
	38	TMWC016-1	POWER BUTTON BRACKET	1	
	39	TMZX5173	NUT FOR M12 EYE BOLT (SIDE)	4	
	40	TPCC70602	CARTON BOX TOP	1	
	41	TPCC70701	CARTON BOX BOTTOM	1	
	42	TPDA1153	CUSHION (CORNER)	2	
	43	TPDA2136	BOTTOM PALLET	1	
	44	TPDA2137	CUSHION TOP	1	
	45	TPDA2138	CUSHION BOTTOM	1	
	46	TPDA2139	BOTTOM SKID	2	
	47	TPDA2158	CUSHION TOP CENTER	1	
	48	TPDA2159	CUSHION BOTTOM CENTER	1	
	49	TPDA2160	PROTECTION-CENTER_BOTTOM	2	
	50	TPDF1746	ACCESSORIES BOX	1	
	51	TPDF2376	PAPER TUBE A	2	
	52	TPDF2377	PAPER TUBE B	2	
	53	TPDF2378	PAPER TUBE C	4	
	54	TPDF2379	TOP PAD	1	
	55	TPDX0007	JOINT	7	
	56	TPDX0056	BAND	2	
	57	TPEH468	PROTECTION BAG	1	
	58	TPEH469	FRONT PROTECTION COVER	2	
	59	TQBC2502	INSTRUCTION BOOK (ENGLISH)	1	
	59	TQBC2503	INSTRUCTION BOOK (FRENCH)	1	
	59	TQBC2504	INSTRUCTION BOOK (SPANISH)	1	
	60	TQEF035	POLY BAG (EYE BOLT COVER)	1	
	61	TQEF035	POLY BAG (EYE BOLT)	1	
	62	TSXL490	CABLE (DS1-DN1/DS3-DN2)	2	
	63	TSXL737	CABLE (C10-C20/C30-C40)	4	
	64	TSXL859	CABLE (D31-C21)	1	

Model No. : TH-85PF12U Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	65	TSXL860	CABLE (D32-C31)	1	
	66	TSXL861	CABLE (D33-C21)	1	
	67	TSXL862	CABLE (D34-C31)	1	
	68	TSXL863	CABLE (SC20-D20)	1	
	69	TSXL864	CABLE (C22-C32)	2	
	70	TSXL927	CABLE (SU11-SD11)	1	
	71	TTUA2284	REAR COVER C/L ASSY	1	
	72	TTUA2285	REAR COVER C/R ASSY	1	
	73	TUWC072	SIDE POWER SW COVER	1	
	74	TUXJ709	CAB CORNER JOINT METAL	4	
	75	TUXJ710	CAB CORNER STOPPER METAL	4	
	76	TUXJ712	CABINET POSITIONING METAL L	1	
	77	TUXJ713	CABINET POSITIONING METAL R	1	
	78	TXFKU0101MB	REAR COVER L ASSY	1	
	79	TXFKU0201MB	REAR COVER R ASSY	1	
	80	TXFMM0201MB	STAND HOOK ASSY	4	
	81	TXFUX1501MB	REAR COVER CONNECTING METAL (A)	1	
	82	TXFUX1601MB	REAR COVER CONNECTING METAL (B)	4	
		TXJDN501MB	LVDS CABLE (DN5-D5)	1	
		UR76EC2803A	BATTERY COVER	1	
		THEA068N	SCREW	4	
		THEL0239	SCREW	12	
		THEL027N	SCREW	12	
		THEL0429	SCREW	19	
		THEL065Z	SCREW	26	
		THTA0419	SCREW	4	
		THTD013N	SCREW	20	
		THTD0179	SCREW	6	
		THTF011N	SCREW	214	
		XTV3+10JFJ	SCREW	3	
		XTV3+8JFJ	SCREW	1	
	83	XVN12+22FJ	EYE BOLT (M12)	2	
	84	XWB16BVJ	M16 SPRING WASHER	4	
	130	THEA215	M16 BOLT	4	
		XYN3+F10FJ	SCREW	4	
		XYN3+F6FJK	SCREW	11	
		XYN3+F8FJ	SCREW	19	
		XYN3+J10FJ	SCREW	1	
		XYN4+E8FJ	SCREW	1	
		XYN4+F10FJ	SCREW	6	
		XYN4+F10FJ	SCREW	57	
		XYN4+F10FJ	SCREW	8	
		XYN4+F15FJK	SCREW	9	

Model No. : TH-85PF12U Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		XYN4+F32FJ	SCREW	24	
		XYN4+F8FJ	SCREW	42	
		XYN5+F15FJ	SCREW	12	
		XZBT6506	POLY BAG (INSTRUCTION BOOK)	1	
	85	ETX2MM779AGA	CIRCUIT BOARD P(SUB)	1	
	86	ETX2MM779MG	CIRCUIT BOARD P(MAIN)	2	
	87	TNPA4103AB	CIRCUIT BOARD PB	1	
	88	TNPA4994	CIRCUIT BOARD F	1	
	89	TNPA5009	CIRCUIT BOARD SS2	1	
	90	TNPA5010	CIRCUIT BOARD V1	1	
	91	TNPA5011	CIRCUIT BOARD V2	1	
	92	TNPA5012	CIRCUIT BOARD V3	1	
	93	TNPA5013	CIRCUIT BOARD S1	1	
	94	TNPA5014	CIRCUIT BOARD SS3	1	
	95	TNPA5015	CIRCUIT BOARD SU	1	
	96	TNPA5016	CIRCUIT BOARD SD	1	
	97	TNPA5017	CIRCUIT BOARD C1	2	
	98	TNPA5018	CIRCUIT BOARD C4	2	
	99	TNPA5019	CIRCUIT BOARD C2	2	
	100	TNPA5020	CIRCUIT BOARD C3	2	
	101	TNPA5036	CIRCUIT BOARD H5	1	
	102	TXNHA10VKT	CIRCUIT BOARD HA	1	
	103	TXNHHH1VBTT	CIRCUIT BOARD HHH	1	
	104	TXNSC101MB	CIRCUIT BOARD SC	1	
	105	TXNSS101MB	CIRCUIT BOARD SS	1	
	106	TZTNP0101MB	CIRCUIT BOARD D	1	
	107	TZTNP0201MB	CIRCUIT BOARD DN	1	
	108	TZTNP0301MB	CIRCUIT BOARD DS	1	
	109	TZTNP0401KB	CIRCUIT BOARD HX	1	